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*Ancient Indian Numerals.—By* Edward Thomas, *Esq. B. C. S.*

I have reserved for independent examination, the letters or figures inscribed on the *obverse* field of the Peacock coins. The readers of the Journal of the Asiatic Society of Bengal may call to mind, that Jas. Prinsep, in the number for April 1838, first introduced a notice on "the Sanscrit Numerals," which, up to that period, he had succeeded in discovering on coins, Inscriptions, &c.

His prefatory remarks are so apposite and so essential to a due understanding of the subject as it then stood, that I need make no apology for reproducing them in this place. "The most ancient mode of denoting number in the Sanscrit languages, as in the Greek and Latin, was by the use of letters in alphabetical order. This system we find prevalent in all ancient Sanskrit works as well as in the Pálí, the Tibetan and other derivate systems. There do not appear to be any numerals peculiar to the Pálí. In their sacred records, the words are always written at length; they have also the symbolical words of the Sanskrit astronomical works, and what is called the *Varna-sankhyá* or numerical classification of the alphabet. The numerals now employed in Ceylon, Ava, Cambodia, Siam, have hardly the slightest affinity to one another."

"When this system was exchanged for that of the decimal or cipher notation does not appear to be known, or to have been

investigated by the learned.* Up to the 9th or 10th century of our era, the Nágari numerals extant on numerous monuments do not differ materially from those now in use."†

Jas. Prinsep then goes on to narrate the circumstances under which he came to detect the values of certain numerical symbols, which were repeated after the *written* date on three several inscribed copper-plates from Gúzerát. The various totals were supplied as follows 394—380—15—385.

He imagined therefore, that he had obtained the figures representing the numbers 1, 3, 4, 5, 8 and, 9, and pursuing his enquiry, he was able to collect no less than fifteen or sixteen separate forms. This in itself suggested a difficulty, for if these numerals were ciphers, capable of acquiring local value, the five or six extra figures were clearly superfluous. Prinsep evidently felt this, and though he suggested that the surplus numbers might be merely varieties of the normal types, yet with his accustomed candour, he admitted, "It is further to be remarked that in many of the ancient systems, separate symbols were used to denote ten, twenty, &c. in combination with the nine units severally. The curious compound figure seemingly used for the 1 of 15, in the two cases quoted above, may be of this sort: —indeed it somewhat resembles the Ceylonese ten."‡

Following out this latter view of the question, in 1848, I succeeded in demonstrating that these signs were uniformly independent symbolical numerals, each denoting in itself a given number, irrespective of any relative collocation;§ and therefore, that the was equivalent to 300, wherever it might be found, and likewise that the and stood for 80 and 90 respectively, whatever position they might chance to occupy. I then proceeded to distinguish those symbols of the Sáh coin dates, that declared themselves severally units, tens or hundreds by their fixed place in the order of which,

* Dr. Stevenson considers that "our decimal notation" is "a comparatively modern invention of the Scindian merchants of the middle ages." J. R. As. Soc. Bombay, iv.

† J. A. S. B. VII. 348.

‡ J. A. S. B. VII. 353.

§ J. R. A. S. XII. 33.

value was always fitly maintained, notwithstanding that the figures themselves clearly could not change their signification by any relative re-arrangement. Beyond this, I cannot claim to have advanced the enquiry in any essential degree. The important aid, that otherwise might have served me, in the sequent classification of the numbers—the test of their recurrence on the coins of the Sáh Kings—was altogether wanting in the fact, that the order of succession of those princes was in itself undetermined.

A re-examination of the entire subject is therefore sufficiently called for, and it is possible that the new data, which have lately become available, may contribute materially to solve the general problem of the system under which the ancient Indian Scheme of notation was primarily conceived.

Prior to entering upon details and as strictly introductory to the present enquiry, it is necessary to examine the progress of numerical notation in the Semitic alphabet of the language of Northern India.* The Bactrian Pali of Asoka's time is seen to have been

* M. Reinaud's Mémoire sur l'Inde was published after the appearance of my Essay in 1848. I therefore transcribe the information contributed by that work towards the general subject. "Albyrouny a consacré un passage de son Traité sur l'Inde aux chiffres employés de son temps, chez les Indians, avec une valeur de position. Ces chiffres sont appelés par nous *Chiffres Arabes*, et les Arabes les nomment *chiffres indiens*. Albyrouny s'exprime ainsi: Les Indiens, à la différence de nous, ne se servent pas des lettres de leur alphabet pour indiquer des nombres. Mais, de même que l'alphabet varie suivant les provinces, les chiffres changent aussi; les indigénes les nomment *anka* انک Les chiffres dont nous faisons usage sont empruntés à ce que l'on a trouvé de plus convenable chez eux.

'Du reste, les formes sont indifférentes, pourvu qu'on s'entende de part et d'autre. Dans le Cachemire, on ne se sert pas de traits particuliers pour exprimer les nombres, ou a adopté les signes employés par les Chinois. Mais un point sur lequel tous les Indiens sont d'accord, c'est de procéder d'aprés la système décimal." * * M. Reinaud continues. "Arrêtons nous un moment sur les paroles d'Albyrouny:" Les Indiens, a-t-il dit, ne se servent pas des lettres de leur alphabet pour exprimer des nombres. "Il existe un traité Sanscrit, composé par Aryabhatta, dans les premiers siècles de notre ère; et dans ce traité, comme cela se pratiquait chez les Grecs, les Juifs, et plus tard chez les Arabes, les nombres sont exprimés par les lettres de l'alphabet ayant une valeur numérale* Apparemment, le procédé em-

* Voy. un mémoire de feu M. Whish, intitulé, *On the* alphabetical notation of the Hindus (Transactions of the Literary Society of Madras, London, 1827).

deficient in any symbols, either literal or figured, capable of repre-

ployé par Aryabhatta était tombé en désuétude au temps d'Alhyrouny. Neanmoins, les traités scientifiques composés par Brahma-Gnpta, au VII. siécle de notre ère, et par les écrevains postéreurs, ne supposent pas, en général, l'usage des chiffres; les nombres sont exprimés par des mots susceptible d'être rattachés à une quantité quelconque. Alhyrouny ajoute qu'on ne pouvait se livrer à la lecture des traités consacrés à l'astronomie, si l'on ne s'était d'ahord rendu un compte exact de cette maniére de compter." * * M. Reinaud sums up his inferences to the following effect, " Il semhlerait résulter de l'emploi des lettres, de l'alphabet par Aryabhatta, pour exprimer les nombres, que dans les premiers siécles de notre ère, les Indiens mêmes, en employant ces lettres avec une valeur de position, n'avaient pas encore eu l'idée de recourir à des signes particuliers. A l'égard de la méthode mise en usage par Brahma-Gupta, elle s'explique suffisamment, d'un côté par l'habitude ou les indigènes ont été de tout temps de faire mystère de leur savoir; de l'autre, parce que des mots significatifs s'incorporent mieux dans un vers que des chiffres."

While examining the general suhject, it may be useful to glance at the Phœnician system of numerical notation. M. Judas in his erndite treatise on La Langue Phénicienne (*Paris*, 1847) remarks, " La Bihle et les monnaies asmonéennes nous montrent les nombres exprimés chez les Hébrew tantot par les noms appellatifs, tantôt par des simple lettres. Ainsi, pour nous en tenir aus monnaies dont le style a plus de rapport avec celui des monuments que nous étudions, nous y tronvons l'an *un* indiqué par א ה ת ש נ ת, ou seulment par א, l'an *deux* par ב ש, pour
TKHA TNS A B S
ב ת נ ש, l'an *quatre* par ע נ ר א ת נ ש. Nous verons ce double systeme suivi aussi
B TNS EBRA TNS
par les Phéniciens dans leurs inscriptions lapidaires. Mais ponr les monnais ils avaient des signes particuliers, idéographiques, entiérement analogues à nos chiffres." Our Author then goes on to state that the units up to nine were expressed hy simple perpendicular lines (precisely such as recur in the Kapurdigiri Inscription) repeated to complete the requisite nnmhers. The ten was represented hy a plain horizontal stroke, twenty and thirty were formed severally hy a duplication or triplication of tnis sign, the forty was figured hy a symbol approximating to a cinde N of our Italian type, and like the *ten* was repeated to form higher numhers. There was a special cipher for the *hundred* composed of a small circle placed between two perpendicular lines, thus |○|. This numher was also capable of being rendered alphabetically by מאת for מאה "one hnndred," or hy its
TAM HAM
abbreviations מא or מ. After commenting on this system, M. Jndas con-
AM M
tinues, " Nous avons vu dans quelques unes des formules numérales examinées pre-

senting numbers.* In the Kapurdigiri rock inscription the *four* kings are spoken of as "*chaturo rajano*," with the insertion of *four*

cédemment des lettres substituées aux chiffres. Ce procédé, commun á la plupart des langues anciennes, va se montrer exclusivement employé dans quelques inscriptions lapidaires. Dans d' autres, les nombres sont rendus par leur noms entiers. Dans une enfin, le nombre est exprimé en partie par un nom appellatif, en partie par une lettre remplissant le rôle de chiffre," p. 90.

In conclusion I may advert to the high antiquity of this monetary system of Phœnician notation, as exemplified in its use on the Assyrian weights of the 9th or 10th century B. C., where its figures are found inscribed on the bronze lions, discovered by Mr. Layard, and expressed both in words and figures thus—

עשר מנה משא ח=*fifteen manahs*

HNM RSY ASMKH

and again on the same weight.

11111— מנה=15 *manahs*

HNM

J. R. A. S. XVI. 215.

"Mr. Norris on Assyrian and Babylonian weights."

It is further to be remarked that the Phœnician, like our Indian, system, indulged in a variety of forms for the same numeral. M. Judas continues, "Les exemples C. et D. nous offrent des signes numéraux de formes différéntes de celles des chiffres précédemment determinés. Nous n' avons aucune donnée pour fixes avec certitude la valeur de ces signes. Cependant l'explication de Gesenius réunit assez de probabilités pour q'on l' adopte. Selon lui, le cercle de l' example C. emprunté aux médailles d' Acc serait, comme la forme autorise à le croire, li *ain* initial du mot עשרים *vingt*. de même que, dans l' exemple B. 3, *cent* est exprimé par le *mem* *m e r s h y*

initial du mot מאת. Le demi-cercle qui suit sur l' example C. 2, et qui reparait *t a m*

sur les exemples D., serait la moitié du nombre noté par le cercle entier, savoir *dix*. Les signes H. Π. Λ. des exemples D. sont d' autres variantes du chiffre *vingt*. Cette valeur est évidente pour le premier, qui, sur la médaille D., table 36, VI. se trouve placé entre les vingtaines et la dizaine; il ne peut pas faire le nombre intermédiaire car, ainsi que le demande Gesenius, comment croire que, n'ayant pas de chiffre particulier pour *cinq*, les Phéniciens en auraient formé un pour rendre *quinze?* En fin, suivant l'illustre paléographe, Π serait une alteration de ce même signe H; Λ une alteration du signe N.

* It is true, as I formerly remarked, that this position may have to be somewhat qualified, inasmuch as up to this time we are able to cite only the early number *four;* and it is possible that the higher numerical equivalents may, in the necessity of the case, have been subjected to a more perfect system, as is seen to have

perpendicular strokes between the two words, to fix definitively the written number."* Major Cunningham claims to have discovered—on the authority of "a stone slab, which gives, in regular order, the nine numerals†—that the numerical signs of this language were expressed by the initial letters of "their Pushtu names written in Ariano-Pali." How soon after Asoka's time this system was introduced is not stated, but Major Cunningham considers that he has obtained direct evidence of its local use from 144 B. C. to 31 B. C. and he proceeds to add, with reference to these literal figures, "the first four are given in two distinct forms * * and the two forms show in the clearest manner how the straight horizontal strokes of Asoka's, and even later, days, gradually became the 1, 2, 3 of India, from whence they were transmitted through the Arabs to Europe."‡

I now arrive at the most important elucidation that this subject has received since Jas. Prinsep's original discovery, in the "Observations on the dates found in the cave inscriptions at NASIK" by the

occurred in the Cuneiform Inscriptions, where the low numbers were often defined by little more than rude combinations of the equivalent number of simple strokes, while the decimals and hundreds were far less crudely rendered. Rawlinson, J. R. A. S., No. X. p. 172; Hincks, idem, XVIII. 423.

* J. R. A. S. XII. 42.

† J. R. A. S. XII. 225.

‡ J. A. S. B. 1854, p. 703. I must confess that I regard this theory with some suspicion; in the first instance it implies, in effect, the use of a second language in the body of an inscription, the bulk of which is expressed in another tongue; it is admitted that even the limited number of the unit numerals will not stand the Pushtu test, that the initial for *four* must still be taken from the *chaturo* as it occurs in Asoka's Kapurdigiri inscription; and that the signs for 1, 2, 3 must be traced to other sources.

Next, we have to concede that this Arian character which was soon to be superseded by the more exactly expressive Indian Pálí, was enabled either at the time of its own eclipse, or at some subsequent period—to associate its literal numerals with the southern system of writing, and having thus early entered into the alphabets of the Sánscrit and certain Indian dialects, that these figures and the perfect system of notation that they represented, remained uncommunicated to India at large, till at least the end of the 4th century A. D. (Vallabhi Grant J. A. S. B. VII. 966 and Pl. XX. ibid), if not till a far more modern epoch.

Major Cunningham does not appear to have been sufficiently impressed with the real importance of that portion of his discovery, which determines that so early as

Rev. J. Stevenson.* Among these records are to be found no less than twenty-eight figures or combinations of figures, usually appended to the written exposition of the given value defined at length in the body of the text;† the lower numbers are sufficiently simple and

144 B. C. the Indians understood the art of the definition of sums by the sequent arrangement of the ten units, each of which acquired value from its place in the general total. His efforts seem to have been confined to the ascertainment of the limited functions of each figure or the derivation of its normal type.

Hence in noticing Dr. Stevenson's very valuable contributions to our knowledge of the subject he remarks [note p, 704 J. A. S. B. 1854] Dr. Stevenson, in Bombay Journal, vol. V. p. 38, found "a striking resemblance between the character denoting a thousand and the Bactrian S reversed," "and after an examination of the rest he" "thought it exceedingly probable that they were all derived from that source."

Major Cunningham thereupon proceeds to congratulate himself on the result, that "our independent deductions are the more satisfactory as they were obtained from different sources."

It is certainly singular, that while acknowledging the correctness of Dr. Stevenson's attributions and even pressing it into support of his own argument, the writer did not perceive that the very admission of the conclusiveness of the one determination necessarily compromised the other, the simple concession that a separate and independent character of the Bactrian alphabet was borrowed, as carrying that value to express the sum of one thousand, was directly opposed to the notion that the unit *literal* cypher of that system of writing were adequate to acquire value from relative position, as his published inscriptions purported to prove; if the science of numeration had advanced so far as to determine that the act of locating the unit 1 in the fourth place of a line of figures sufficed to represent *one-thousand*, what need was there of complicating the operation by the use of a special and separate cypher to define the requisite amount? It is possible that Major Cunningham understood that the adoption of Arian letters into the Gujrat alphabets, as exponents of given numbers, took place prior to the elaboration of the system of which he illustrates, but from the tenor of his observations it would certainly appear that he had lost sight of the difficulty above suggested.

* J. A. S. B. 1854, Note p. 407. Journ. Bombay branch R. A. S. July, 1853, p. 35.

† I could have desired that the facsimiles of these inscriptions should have been more calculated to command our faith in their exact rendering of the originals, but I observe that Dr. Stevenson himself does not place any very great reliance upon the transcripts, as he remarks, "I trust also to be able to compare all the published copies of the facsimiles with the inscriptions themselves, which, in respect to those at Nasik, I have been unable as yet to do, so as at least to get as

obvious, and are only perplexing in the multiplicity of forms, some of their exponents are seen to take; the larger sums on the other hand, are expressed by a crude and uncertain method, under which the amount has to be read backwards in the current line of writing; thus, the generic symbol for *thousands* is ordinarily entered first, that for *hundreds*, second, while the specific decimal or unit cipher, which determines the value of the whole, is placed last in the order followed by the rest of the inscription. At times again, the mark for *hundreds* is indifferently inserted before or after the figure which indicates the total.* If, by any possibility, further argument were required to that end—this double system of arranging the ciphers would alone establish, that they were incapable of having their value enhanced or diminished by change of place.

Dr. Stevenson's point of departure, like my own on a previous occasion, was from Jas. Prinsep's investigations of April, 1838, he does not seem to have seen my paper of 1848, and therefore expresses no opinion either for or against my position, but continues to follow Prinsep in reading ꟽ as *three*, in preference to *three hundred;* at the same time that he admits, that the three horizontal lines fully suffice to express the lower number, for which indeed he has a second variant, and while his own materials contribute separate and independent signs for 10, 20, 30, and *one hundred:* the latter being specifically distinguished from the ordinary generic sign for *hundred.*

The next item I have to advert to, is the idea advanced that the Satrap numerals owe their forms to the Bactrian alphabet.† This

perfect a copy of them as can be obtained in the present state of the rocks. As the facsimiles are the property of Government and executed by another gentleman [Lt. P. F. Brett], I have done nothing more than, to the best of my ability, see that the lithographer executed his task faithfully." Bombay Journal, 1853, p. 57. And again p. 50, Dr. S. observes "it is difficult for me at present to say whether the frequent omissions of the point for म् and other anomalies, belong to the original, or are the faults of the facsimile."

* Nasik Inscription, No. 2, plate 7.

† Dr. Stevenson remarks "In the Satrap inscriptions, the numerals used to express the different sums of money there mentioned are peculiar. At first I could determine nothing about their origin, but on a careful examination I found a strik-

supposition I can scarcely bring myself to accede to. The conclusion is chiefly based upon the similarity traced in certain forms of the figures, to the original letters of the Arian writing; in order to carry out the comparison however, very great liberties have to be taken with the normal forms of the characters themselves, and even these rather forced identifications are confiued to a very limited proportion of the entire suite of the numbers; while on the other hand many of the figures are clearly and indubitably composed of letters of the alphabet in which the inscriptions at large are expressed. That these latter in their origiual constitution actually were indigenous letter symbols seems to be fully established by other more recent inscriptions, where such forms are seen ordinarily to follow the progressive modification of the cognate alphabet.

I now proceed to examine the figures in detail.

To commence with the units, I conclude that no one will wish to gainsay the simple and obvious determination of — = 1 = = 2 or ≡ = 3, as suggested by me in 1848; the first mark occurs on Sáh coins,* on the Huriswámini inscription at Sanchi,† and on the Peacock coins of the Guptas, the second is found on Sáh coins,‡ and ou the Udayagiri cave inscription,§ and the third is met with amid the early Páli of the Bhilsa Topes,‖ on the Sáh coins,¶ and in the Chandra Gup-

ing resemblance between the character denoting a thousand *(Sahasra)* and the Bactrian S reversed. This induced me to examine the rest of them, and I think it exceedingly probable that they are all derived from that source. The Bactrian Tx. pronounced in Sanscrit J or Dsch, will represent well the figure, which is first in 5 or 10 *(Dasha.)* The sign for 5 (*Pancha*) is the P, or the old Indian ५ inverted. The Bactrian double T, also approaches very nearly to the 8 of our inscriptions, as if to denote ऋठ. It would appear, then, that the Bactrian letters had been introduced into the Satrap Indian inscriptions as numerical cyphers. The system, also, is the ancient Roman and Greek one, that in which there are different signs for the 1 in tens, hundred and thousands; our present decimal notation being, as I have noticed elsewhere, a comparatively modern invention of the Scindian merchants of the middle ages, (J. R. A. S. Bombay IV.) Future research will probably show, as Mr. Prinsep has done with a few of them already, that the old Indain numerals are also ancient letters," (J. R. A. S. Bombay V. 39.)

* J. R. A. S. XII. 62. † J. A. S. B. VI. 458. Bhilsa Topes, Pl. XXI. No. 198.
‡ J. R. A. S. XII. 39. § Bhilsa Topes, No. 200. ‖ Bhilsa Topes 252, No. 121.
¶ J. R. A. S. XII.—38.

ta inscription at Sanchi.* The 2 and 3, in this form likewise appear among the Nasic legends. It will be seen that the 2 and 3 are essentially the same figures that we have in use at the present day, modified merely by the cursive form given to them by the connecting semicircles, by which the necessity of removing the pen from the paper while expressing each separate stroke was avoided, and these in themselves furnish us with a singular illustration of what progressive modifications of Indian alphabets owe to the mechanism of penmanship.†

Dr. Stevenson contributes an independent form for the *one*, which he likens to the Bactrian क but which under either of its modifications, is simply and solely the compound ह pt of *the* alphabet, in the body of which it finds a place. He also has a new cypher for 3 in his inscription No. 5, but I am not satisfied either with the accuracy of the outline, or the low value assigned to the figure employed; as, even accepting the symbol to stand for 3, the sum total to be consistent with the associate system of notation, ought to be read as *three hundreds* and not 300,000 as given in the text.

The *four* is proved to us by the copper plate inscriptions noticed above. The form of this cipher varies considerably in its different examples, ranging from the simple ५ to the most common type ५ and extending even to the possible ५क or ५ of Dr. Burns No. 1, copper-plate,‡ this last reading if admissible, might be thought to ally it with the initial of ५ग, *an age*, one of the symbolical words for *four*. Certain of the Sáh coins give the outline of the symbol as a ष with two backward horizoutal lines issuing, parallel to each other, from the prolonged limb of the secoud down-stroke of the letter, and again, singular to say, at times the subjoined letter is formed by one continuous stroke, carried round after the manner of the Gupta न, under which aspect the figure might easily have grown into the ४ of modern days.

Dr. Stevenson gives us four imperfect varieties in the outliue of this number commencing with the ५क above adverted to, passing on

* J. A. S. B. VI. 455. Bhilsa Topes, No. 197.

† Prinsep has already traced the gradual development of many of these alphabetical changes. J. A. S. B. VI. 1044.

‡ J. A. S. B. VII. Pl. XX. J. R. A. S. XII. 32.

to symbols shaped like the letters क्ष and क्षी, and ending with a form like the Bactrian *ch;* but I am inclined to consider each and all of these examples as either ignorantly executed or incorrectly copied types of the standard क्ष.

The value of the cipher for *five* was also first contributed by the copper-plates, its component letters here read clearly as ना. Its numismatic equivalent appears to exist in the unit to be seen on the leaden piece, No. 29, Pl. II. J. R. A. S. XII. of which the East India Company's coin of Vijaya Sáh seems to offer another variety.* It is difficult to trace the slightest affinity between any of these forms and the modern figure of the Devanagari system. The only verbal number that would at all accord with the initial ना, would be नाग, *a serpent*, which term however is used to represent *eight:* the Nasik inscription further determines, that with these very dissimilar types, must be classed a figure offering an absolute counterpart of the ऋ *ru* of the Sáh alphabet, add to this, the same authority requires the admission to a joint classification, of a variant of more formal outline, which gives an additional forward head stroke such as is used to express the letter ऋा;† under which aspect, the sign may be compared to an English F. Dr. Stevenson exhibits, beyond all these, two other varieties of the five, the one in a reversed ऋ or rather of a form like the Gupta न n,‡ while the second in a measure follows the outline of a Bactrian P, but in both these instances, I am more disposed to concur with that author in distrust of his materials, than in fanciful comparisons with the Bactrian alphabet.

The ancient Indian *six*, is given in Dr. Stevenson's plate, but with the expression of a doubt regarding the identification; the second or Satrap form, which may be read as क्रु, is seemingly entered with more confidence. I am unable to trace any numismatic figure that will satisfactorily accord with the latter.

The *seven*, under the evidence of the Nasik Inscriptions, may be indicated in the unit letter on coin 14, Pl. I. J. R. A. S. XII. which is elsewhere of frequent occurrence. The correct outline of the

* J. R. A. S. XII. 54.

† J. R. A. S. XII. p. 40, and fig. 23, Pl. I.

‡ J. R. A. S. XII. Pl. II. fig. 41.

figure is well represented by the modern Bengali ৳ ḍ. The original character assimilates somewhat with the exceptional form of ৲ of the Gupta Alphabet of Allahabad, but does not by any means approach the formation of that letter in the Sáh inscriptions, nor does it bear any likeness to the cramped ৲ on the *reverse* of the coins of the Sáh Dynasty.

A well-fashioned ancient ৬ is the symbol next in order of succession: were there any more distinct justification for attempting to explain these letter-ciphers by the symbolical terms of the Sanscrit texts, a somewhat forced construction might be put upon this figure as অঙ্ক *a*nka *nine;* but if outline similitudes have, as it would seem, a preferential claim, this figure may well demand to be considered as the early model of the ৮—8 which retains so much of its identity to this day amid the numerals of the modern Devanagarí. Dr. Stevenson has a cipher for this number—classed under the Satrap heading—which he likens to a Bactrian T. However, I cannot but observe that Lt. Brett's original copy of the text of the inscription scarcely represents the figure in such close identity as the outline entered in the Table of Numerals compiled from his facsimiles would make it.

Under the catalogue for the variants of eight, perhaps, should be reckoned the letter, not altogether unlike an old ৳ ṭ or ৾ ḍh,* but the determination of this point is dependent upon the correct ascertainment of the true form of *nine*, which is but indistinctly expressed in No. I. Násik inscriptions, being fashioned, in the one instance, after the manner of an imperfect ৯, and in the second, or supplementary portion of the same inscription, as ৯ of the same character, the former of which is not far removed from the normal form of the Sawrastran ৳ ṭ. The Sáh Coin No. 31, Pl. II. J. R. A. S. XII. seems to furnish us with the correct model of the *nine*, but I hesitate in conclusively classing all these ৳ ṭ, ৾ ḍh, ৯ ḍ and ৻ di—as the proved exponents of this number, only because I observe, that Dr. Stevenson, in his table, gives the form in an inversed direction, something after the model of a cursive Bactrian S. This outline certainly does not agree with that given in Lt. Brett's accompanying detail inscription, but the author may possibly possess other

* J. R. A. S. XII. Pl. II. fig 31. J. A. S. B. VII. p. 354, fig. 5.

sources of knowledge from whence he may have obtained his approved outliue.

The Gupta units vary somewhat from the Sáh exemplars. As yet I have only been able to discover three definite and complete forms, the ४—*four* above adverted to, the *one* which is shaped as an ordinary hyphen, and the curious figure that occurs on No. 57. Pl. II. J. R. A. S. XII. here its outline follows that of an alphabetical न; but, in treating of Gupta numbers I must fairly warn my readers of a preliminary difficulty that I have experienced iu regard to the correct point from whence they should be viewed. The Nasik inscriptions display the symbol for *one hundred* as written perpendicularly, and if that is the correct direction of the cipher, our Gupta dates placed in front of the profile of the Kiug, ought to be read Mongol fashion, like the names of the monarchs of the Gupta race, as usually expressed on the field of their gold currency. On the silver pieces of Kumára Gupta, however, whether the sign for 100 may be reversed or not, the arrangement of the tens and units clearly demonstrates that the whole must be read as consecutive rather than as superposed figures, while strange to say, the dates on Skanda Gupta and Buddha Gupta's coins seem to necessitate a contrary mode of decipherment.

I have entered the outlines of the Gupta numerals both tens and units in accordance with this somewhat arbitrary arrangement, leaving the poiut fairly open to correction, when more numerous and more perfect specimens of this coinage may decisively instruct us on the general question.

I have yet to advert to the outlines last on the unit line, but the single example of this sign to be found on a coin of Kumára is too imperfect to justify my quoting it with any confidence.

For the assignmeut of the several symbols representing the numbers from 30 to 80, we have equally but very imperfect data. The 10, 80 and 90 are established by the copper-plate duplicate dates. The 10 in a new form, the 20 and 30 are contributed by the Nasik inscription, and we have some slight aid in determining the relative priority of the various ciphers in the occurrence of two of their uumber on the Valabhi grants* of oue, aud the same ceu-

* No. 1, Valabhi Grant (Wathen) J. A. S. B. IV. 481 and No 5, Pl. XX. Vol. VII. No. 4 ditto (Burn) J. A. S. B. VII. Pl. XX. No. 4 and VII. p. 966.

tury, as well as in the Gupta coins now under review, whose register chiefly refers to the early half of their current centennial epoch.

This we may fairly infer from the distinct date of 165, given in Buddha Gupta's Eran pillar inscription; it* is of no consequence,

* I have but lately observed, that I consider, that it imports but little, as to what particular cycle the Gupta dates should be referred, so that they each and all are made to precede the fixed epoch of the commencement of the Valabhi Samvat in 318-19 A. D. I have no especial desire to retain them under the SAKA KÁL, but am fully prepared to subject them to the test of any other suitable scheme of computation. Albirúní's expressions in regard to the Gupta era, in no wise necessitate a notion that the 241 years intervening between the conquest of Saka by the second Vikramaditya in A. D. 78, and the extermination of the Guptas in A. D. 318-19, were exclusively filled in by the domination of the latter.

Any such supposition would involve an obligation to identify some one of the early members of the Gupta family with the original Vikramaditya *Sakari* himself —which, though not altogether beyond the bounds of possibility, is still an improbable association; but taking a reasonable interval to have elapsed after the success of Vikramaditya, and assuming the rise of the Guptas to have been, as it clearly was—gradual, Chandra Gupta the second will not be badly placed by the dates on the Udayagiri and Sanchi inscriptions, when applied to the Saka kál, which will give a return of S. S. 82 = A. D. 160, and S. S. 93 = A. D. 173.

To test the Gupta epoch by another method, which the tenor of the Buddha Gupta inscription at Sanchi recommends to our notice, in the use of the words "in the aforesaid year of his dynasty" (J. A. S. B. VII. 634)—let us assume this 165th year to be the period that had elapsed from the assumption of Suzerani honors by Chandra Gupta the *first*, and further concluding as we have fair reason to do—that the decline of the Gupta power under Buddha did not long avoid complete fulfilment, we may place approximately the period of the sway of the race at about 180 years. Now, by arranging this total anteriorly to the fixed limit of the fall of the Guptas, 318-19 A. D. we obtain the date of 138-39 for the rise of the family. Under this new view then, the Gupta dynasty may be held to have arrived at prominent power during the early half of the *second* century A. D. instead of during the second half of the first century A. D. as I had previously conjectured; thus, Major Cunningham and myself still differ on this head to the extent of nearly two centuries.

To complete the review of this section of the subject it may be as well to examine how the remaining series of figured dates, appertaining to other dynasties, will arrange themselves when tested by cycles at all suitable to their requirements.

The Sáh epoch, which the extant dates on the coins indicate to extend from, say 310 to 400, when tested by the popular Buddhist era of 477 B. C. (J. A. S. B.

in the present enquiry, as to what cycle these figures refer; it is sufficient that the same era must have been used to date both Gupta coins and Gupta inscriptions. It must be admitted that these new lights necessitate a reconstruction of the order of succession assigned to the Sáh kings, but as no great reliance has ever been claimed for the published lists, which were avowedly framed upon the most inconclusive materials, we need not hesitate in modifying any previ-

1854, p. 704) is found to range from 167 to 77 B. C. when tried by the Srí Harsha cycle of Albiruni, 457 B. C. This interval falls between 147 and 57 B. C. If the Seleucidan era be preferred, the Sáh period will have to be assigned to B. C. 2 to 88 A. D. I had before remarked, that "The claims of the Seleucidan era (1st Sept. 312 B. C.) to be considered as the cycle in use under the government of the Sáh kings, are by no means to be lightly passed over, if we bear in mind on the one hand the possible subjection to Greek supremacy implied by the superscription of that language on the local coins, and on the other, the care with which the recognition of this era was enforced in the provinces more directly subject to the Seleucidan rule, as we learn that it was "used all over the East by the Jews, Christians, and Mohammedans. The Jews still style it the *Æra of Contracts*, because they were obliged, when subject to the Syro-Macedonian princes, to express it in all their contracts and civil writings," Gough, Seleu., 3. "In Maccabees, i. 10, it is called the *Æra of the Kingdom* of the Greeks," Gough, 4. (J. R. A. S. XII, 41) nevertheless, I should ordinarily be disposed to give the preference to an Indian cycle.

The Valabhi copper-plate grant of Sri Dhara Sena, dated in *three hundred and twenty ?*—when applied to the Vikramaditya Samvat of 56 B. C. gives A. D. 324; if tested by the Saka era of 79 A. D. the return will be 399 A. D., neither of these dates could be much objected to, but possibly the former will best meet the general wants of the case. Though I am free to confess that I was formerly disposed to doubt the universality of the use of the Vikramaditya era (J. R. A. S. XII. 5) my suspicions on the subject being excited on remarking the extensive prevalence of the employment of the Saka cycle, in the grants published by Elliot and Wathen of so early a date as 490 and 567 A. D. (J. R. A. S. IV. V.), yet if we are to trust to Albirúní, we must clearly yield the preference to the Vikrámaditya era in the localities he indicates in the passage rendered by M. Reinaud "L'ère de Vikramaditya est employée dans les provinces méridionales et occidentales de l'Inde," regarding the Saka kál it is added "Les personnes qui se servent de lère de Saca, et ce sont les astronomes"—(Fragments 145). An item of negative testimony of some value towards establishing local usage, is further afforded by the insertion of the Vikramaditya and the exclusion of the Saka method of computation in *the* grant which determines *the* epoch of the Valabhis (Tod, I. 801).

ous conjectures on the subject.* As far as the limited data permit of my forming a judgment, I am inclined to assign to the several decimals the following order of priority:

1st. The crab-like symbol, the old Páli 𑁒 placed horizontally, No. 6 of Prinsep's list, is now clearly proved by the Nasik inscriptions to stand for *ten*. This was somewhat unexpected, as we already were in possession of a clearly defined cipher for that amount, furnished by the Guzrát copper-plates—which it will be remembered takes the form of a double ट or ट्, with the mark of a र् above the compound and the sign of the आ prolonged forwards from the foot of the upper ट. Besides this, Major Cunningham identifies a third variety of the figure in the letters दि of the Chandra Gupta inscription at Sanchi,† but even these do not exhaust our list of tens, as we have further varieties in the unfrequently employed धि of the Nasik records,‡ and from the same source we obtain a representative of ten which may possibly prove to constitute the letters यि, though the incomplete outline of its base, as copied in Lt. Brett's facsimiles, does not fully agree with the usual formation of that semivowel.

Dr. Stevenson, pursuing the Bactrian comparison, would liken this figure to a 𐨗 j, but apart from the gentle violence of having to turn the top curve the wrong way, which is needful to complete the likeness, the very marked final up-stroke of the original inscription (V. line 5) is altogether superfluous to the due expression of the Bactrian letter.

2nd. The Greek *θ* the Indian थ is also determined for us by the Násik monuments—wherein the figure stands proclaimed as the equivalent of *twenty*. These inscriptions further supply us with a new and independent sign for the same number, in a 𑁔 of their own alphabetical system.

* The details of this I leave for future illustration, it may be sufficient to say here that the subject has been taken into consideration in connection with the present position of the enquiry.

† J. A. S. B. VI. Pl. XXV.; Bhilsa Topes, Pl. XXI.

‡ Inscription V. line 2, Inscription VI. line 5, twice over. On the last occasion its use is peculiar, as, the 1000 instead of being defined as in line 4, by one symbol representing that amount, is expressed by *ten* hundreds.

3rd. Dr. Stevenson assigns the value of *thirty* to a cipher formed like an *e* reversed and which differs but little, from the Karnáth and Telinga figure 3.* It is possible that under the same heading will have to be entered, the symbol identical with the Tibetan *one*, shaped as the *a* of the Bactrian character, which has been placed by Prinsep first in his list.

So also perhaps will Wathen's figure (J. A. S. B. IV. 477) have to be referred to this association, unless indeed, it is preferred to look upon it as an imperfectly formed *θ*.

4th. The *forty*, *fifty*, *sixty* and *seventy* are purely conjectural assignments; still, there exist some imperfect hints for their relative arrangement.

The figure fashioned like a Gupta seems to come first in order; the sign occurs on the coins of Dama Sáh and of his son Dama jata Sriyah.† It has not as far as I am aware of, been met with in Rock inscriptions on copper-plates.

Next I would place the sign formed like a narrowed , which is found so frequently on the money of Vijaya Sáh son of Dama Sáh.‡ This symbol has not been detected in inscriptions, while the which constitutes the next figure in serial order appears only, as a solitary example, in the Huriswámini inscription at Sanchi.§ The fact of the never having been discovered among the copious coin dates may well give rise to a question as to whether the normal sign may not affect a different form as a numismatic figure.

For the definition *seventy*, I am greatly inclined to claim the appropriate representative to which Prinsep desired to attribute the function of the initial of *seven* (sapta).

It is necessary that this cipher should come in late among the numbers under eighty, as the Gúzrat dated plates instruct us that we have to insert "six successions to the *Gadi*" between the date of the No. 1 Valabhi grant,‖ the decimal of which is the 30 above referred to—and the 3rd Valabhi grant,¶ which enters the after the identical 300 of the earlier document.

* Pp.—J. A. S. B. VII. Pl. XX.
† J. R. A. S. XII. 53, 54.
‡ J. R. A. S. XII. 54.
§ J. A. S. B. VI. Pl. XXVI.
‖ J. A. S. B. IV. 481.
¶ J. A. S. B. VII. 966.

The figure for *eighty*, which is composed of two cones touching each other with their bases forming one horizontal line—does not seem susceptible of resolution into any alphabetical element, unless by a rather forced construction it were compared to a Páli ह्व *chh*. This is the lapidary form of the symbol, on the silver coins it appears as a simple circle with a perpendicular line as its diameter; but on the leaden pieces of the Sáh kings* it retains the squarely-based outline, while the Rock inscriptions and the copper-plates at times, present us with a less formal contour of the cipher.

The *ninety* is formed in the one case by a duplication of the figure for eighty, when the flat basis of the single *eighty* is absorbed into the other and the combination presents four rounded corners. The numismatic character again is constructed more simply, but somewhat after the same scheme, by adding a second diameter to the circle at right angles to the single line in the cipher for 80. Though the general outline of the lapidary symbol is still retained upon some specimens of the coinage. I may here notice incidentally, that both these forms are to be found on the stone blocks of the ancient Hindu temples, collected by the Mohammedans and used in the construction of the mosque of the Kuttub at Dehli.

There is, I think, a cursive form of this figure of *ninety*, which occurs on a coin of Swámi Rudra Sáh in the decimal place in the date; an imperfect copy of this may be seen in No. 3, page 38, J. R. A. S. XII. and in the third cipher for ninety in the accompanying plate.

It remains to speak of the peculiarities of the Gupta decimals. I am able to quote the outlines only of four out of the needful nine.

The $\theta$ or 20 is found in its normal state on the coins of Kumará Gupta.

Skanda Gupta discloses two varieties of decimals, the one a form like the first Gúzrat symbol for *ten*. but turned in a different direction and possessed of an additional small cross at the top opening, the lower part of the figure however, is indistinct on *both* the specimens on which it occurs. The other sign seems to consist of the letter ग्.

And lastly Buddha Gupta's coinage supplies two possibly varying

* J. R. A. S. XII. Pl. II. 27, 28, 30, 31.

forms of a symbol that may be compared to a ऋ, all of these figures will be found duly inserted in the plate.

The Gupta coinage however, further presents us with a valuable contribution in the symbol representing *one hundred;* hitherto, amid the extensive range of inscriptions, coins and copper-plates, we had discovered no single centesimal number except the perpetual recurring *three hundred.* Were any confirmation of the coin testimony required, it has been opportunely afforded by the Násik inscriptions, in No. IX. of which will be found a counterpart of our Gupta *one hundred.* Dr. Stevenson failed to detect the correct form of the figure, and expressed himself somewhat doubtfully as to its value* and further hesitated to incorporate the sign into his table of numbers. Still, to him is due the merit of first publication, to which I willingly bear testimony!

The outline of the numismatic cipher for 100 really assimilates closely with that of the Bactro-Páli letter H, the lapidary form of the symbol, however, is compared by Dr. Stevenson to a ऱे.

Finally I have to advert to the symbol for *three hundred,* whose frequent appearance had almost led me to distrust its correct interpretation as such in *all* its positions,† until I met with the Gupta

* Journ. Bombay B. R. A. S. July, 1853, p. 54. Dr. S. says, "The figure like the ऱे at the end of line 4th, I suspect to be a numeral for 100.

† My doubts and difficulties on this head were freely stated in my paper of 1848, to the following effect:

"A consideration that undoubtedly tends to cause distrust in the conclusiveness of the decision, which assigns the value of 300 to all the known forms of the symbol च, arises from the circumstance of its appearing as the unvarying representative of *the* hundreds on both the coins and inscriptions [the Multye plates, J. A. S. B., VI. 870, may possibly prove an exception to this rule], and the singular coincidence which results from the facts that, among the many dated coins now capable of citation, and the fair proportion of *figure-dated* copper-plate grants at present known, not only must each and all, under this view of the case, be dated in 300 and odd; but likewise, strange to say, the same identical hundreds as found on these different monuments must of necessity be referred to totally distinct cycles, whose initial epochs are removed from each other by an interval of some centuries at the very least.

These observations lead naturally to the inquiry, whether, in the early stages of progressive improvement in notation, it may not have been possible that, whereas

*one hundred*, which proved to me that no subordinate system of increasing the power of any fixed figure by the addition of subsidiary lines or marks existed in this grade of the general scheme of numerical notation. It will be noticed, now that we have come to alphabetical comparisons—how great a similitude its quaint outline bears to the letter ञ *ñ* as so rendered by Prinsep in the Sanchi inscription, Pl. XXV. Vol. VI. J. A. S. B. something of whose semblance is still retained in the Bengali counterpart of that letter

we find a striking want of variety in the outlines, and a marked absence of ingenuity in the expression of the distinctive forms, of the decimal ciphers, that so, in like manner, the changes in the definition of the different hundreds may have been in part effected by minor and subsidiary additions to a fixed symbol, as is still practised in the entire Tibetan numerical system. It will be seen that there is a palpable variation in the form and numbers of the side *spur* strokes in different examples of the figure व, passing from the occasional entire omission of the mark to the use of one or two of these lines, and in some instances (No. 6, Pl. XX., Vol. VII., J. A. S. B.) the simple lower stroke is changed into a complete subjunctive curve, making in itself a second character, similar to the body of the old alphabetical letter व N. But, on the other hand, it will not fail to be remarked that there is much latitude discoverable in the expression of many of the unit figures, whose complete identity of value there is but little reason to discredit, and hence that it would be unsafe to assume a difference of power to be conveyed in the one case, by what is possibly a mere flourish, which could not be similarly claimed for a like modification in another." (J. R. A. S. XII. 35.)

The Násik inscriptions more fully illustrate the latitude permissible in these additions to the fixed symbol, which however, in no case seem to affect its definite value. For instance, the ordinary letter व which denotes *hundreds* is modified by these linear adjuncts into वे (II. 3) वु (V. 3) and वो (II. 3) apparently at the caprice of the original engraver (for we can scarcely suppose the modern copyist to have taken any such liberties with his materials).

Again, the ए which also in its normal form represents the power of *hundreds*, is changed at one time, by a continuation of the second line of the triangle below its base, into an impossible Sanskrit compound of ΕΨ—or rather into a very correct figure of the older form of the Phœnician व B. (V. 2); on other occasions by the addition of a vertical head-line the numeral is converted into a व v. (VI. 5), while earlier in the same inscription, a further modification magnifies it into वे.

So also with the sign for thousands, a reversed P (the Phœnician व), which
R
after appearing frequently in all its simplicity of outline is subjected (in inscription VI. line 22) to the supplementation of two forward strokes, such as are used to indicate the letter ज्ञा in conjunction.

ఞ ñ—but, the similarity of one form* of the figure with Kristna, modern Canara and Telinga alphabetical sign for the Devanágri अ, is still more striking,† though some might prefer to identify it with the letter ई i, of these types of character with whose several outlines it still more exactly accords!

In conclusion, it is requisite that I should add a few words on the table of numerals, in which I sum up the results of my enquiry.

The second compartment includes all such symbols whether lapidary, numismatic or graven on metal—that I am prepared to adopt. The third column exhibits Prinsep's original conjectural arrangement of the figures and their supposed variants. The remaining spaces are filled in with the products of Dr. Stevenson's investigations, but I must warn my readers, that I have taken a double liberty with that author's materials; on the one hand, I have copied my examples of each cipher from the transcripts of the original facsimiles of Lieut. Brett, which are lithographed at large in the Bombay Journal, in preference to following the outlines entered in the associate table of numbers compiled from the same sources.

On the other hand I have ventured to insert, subject to correction, two signs for *two*, which Dr. Stevenson does not definitively acknowledge in his list; but, which I obtain from his rendering of inscription No. VI.‡ The third figure for *hundreds*, under the Satrap heading, is also of my introduction, under similar authority.

* J. A. S. B. VII. Pl. XX. No. 6, copper-plate.

† J. A. S. B. VI. Pl. XIII.

‡ J. R. A. S. of Bombay, V. 53.

*Catalogue of Nipalese Birds, collected between* 1824 *and* 1844.—*By* B. H. Hodgson, *Esq.*

*To the Secretary of the Bengal Asiatic Society.*

Sir,—When I went to England in 1844 I presented my immense Zoological Collections (10,000 specimens, osteological and ordinary) to the National Museum. I was immediately asked, how many of the species had been named and described, one or both, in print? I answered that all the new Mammals had been so, by myself, in the Bengal Asiatic Journal, or in the India Review, and that a vast number of the new genera and species of Birds had been described in a paper sent from Nepal just before I left it. But that paper, it was replied to me, had not appeared, and I was requested to recast it, as well as I could, from rough notes, not having retained a copy of the MS. I did so, and the paper was printed. But it did not include the whole of my ornithological stores, and it seemed expedient to put at once in print, my own complete Catalogue of Birds. Accordingly I placed that catalogue in the hands of Mr Gray for publication, and it soon after appeared in London,* substantially my own, but with its groups disposed according to the system followed in the National Museum Catalogue. The alterations I think were not always for the better, my own distribution having been founded on a careful examination of the entire organs of species in a fresh state—a vast advantage, though one, no doubt, qualified by my non-access to Library and Museum. In due time another complete Catalogue of all my collections appeared under the auspices of the Trustees of the National Museum, and therein the Curators of Zoology in that institution made such rectifications of my printed and MS. catalogues as seemed proper to them. No doubt, there was upon the whole much improvement upon my unaided work performed in the jungles. But, for the reason I have already assigned, the new determinations of species and allocations of types according to their affinities, were not always sound, and students of Himalayan Zoology have, accordingly, found it expedient

* In Gray's Zoological Miscellany for June, 1844.

to consult the priorly made Catalogue of Birds which, notwithstanding the changes made in it also by the same hands, yet more clearly than the latter and official one, reflected my own conceptions, particularly as to novelty of species.

Accordingly I have been frequently asked for copies of this prior Catalogue which is frequently cited by writers in Europe, but I have no more copies left and cannot comply with these requests. It seems to me that the republication of the Catalogue in our Journal might be of service to local explorers, whose labours it is the great aim of our Journal to assist and facilitate; and that this Catalogue, giving as it does, in one view, a complete enumeration of Nipalese species, must always be convenient for consultation, notwithstanding its errors. I therefore forward it for publication if the Society see fit; and I have marginally noted the chief points in which, I think, Mr. Gray has unwisely deviated from my own allocation of new types.

I am, your's truly,
B. H. Hodgson.

The numbers after the names refer to the drawings and specimens, a nearly complete series of which has been sent to the British Museum. The genera are arranged according to the sytem followed in that collection.*

*Vulturidæ.* Gypaëtos barbatus, 604. Neophron percnopterus, 605. Vultur fulvus, 805. V. leuconotus, 46. V. bengalensis, 47. V. tenuiceps, 806. Polypteryx cupido, v. cinereus? 802. Hemigyps ponticerianus, 804.

*Falconidæ.* Buteo canescens, 11, 12. B. erythrura, 779. Hemiætus strophiatus, 496. Aquila crassipes, v. nævia? 1. A. nipalensis, vel rubriventer, 5. A. milvoides, 583. A.? Daphanea, 683. A. vittata, 725. A. bifasciata, 789. Neopus perniger, 2. Butaquila leucocephala, 859. Nisætus grandis, 7. N. pallidus, 8. N. nipalensis, 9. N. pulchrior, 680, 786. Limnætus unicolor, v.? pennatus, 757. Circætus nipalensis, v. undulatus, *Vigors*, 4. C. tarayensis, 6. C. mithilensis, 754. C. maculatior, 777. C. gallicus, 753.

* This arrangement so far as it differs from my own (only slightly) is that of the Museum Catalogues. For the rest, the names of species, genus, subfamily and family are all my own.

Pandion indicus, 715. Ichthyiaetus plumbeus, v. Horsfieldii ? 10. I. hucarius, 756. Haliætus albipes, v. Macei ? 3. H. lanceatus, 755. Dentiger pondiceriauus, 15. Falco thermophilus, 21, 787. F. milvipes, 26. F. peregrinus, 29, 44, 45, 788. F. peregrinoides, 607, 682. F. sultaneus, 681. F. micrurus, 821. F. subbuteo, 50. F. rufipes, 48. F. rufipedoides, 718. F. tinnunculus, 38, 39, 42. F. tinnunculoides, 49. F. iuterstinctus, 40, 41. F. chicquera, 43. Hierax entolmus, v. Bengalensis ? 51, 52. Hyptiopus (Baza) lophotes, 657. Pernis bharatensis, v. apivorus ? 723, 727. Elanus melanopterus, 23. Milvus subhemalayanus, 13. M. indicus, v. cheela ? 14. M. ? rotundicauda, 16. Astur palumbarius ? 24, 25, 685. A indicus, 27, 28, 766. Butastur teesa, 708. Accipiter nisosimilis, 30, 31. A scutarius, 32, 34, 36, 37, 722. A. subtypicus, 33, 780. A. affinis, 35. A. fringillaroides, 660. Circus cyaneus, 17, 18. C. cinerascens ? v. pallidus ? 19, 20. C. æruginosus, 22. C. melanoleucos, 706. C. nipalensis, 736. C. plumipes, 497.

*Strigidæ.* Athene tarayensis, 63. A. cuculoides, 67. A. tubiger, 486. A. perlineata, v. uudulata ? *Buch.* 707. A. badia, 770. Ninox Jeridius, 670. Scops sunia, 64, 65. S. lettia, 66. S. pennata, v. Aldrovandi ? 721. Cultrunguis nigripes, 55. C. flavipes, 56. Aetoglaux (Huhua) nipalensis, 54. Otus vulgaris, 60. O. brachyotus, 61. Mesomorpha (Urrua) cavearia, v. Bengalensis ? 57. M. coromandra, 742. M. nivicola, 827. Meseides (Bulaca) newarensis, 59. Strix flammea, 62. S. badia, 841.

*Caprimulgidæ.* Caprimulgus saturatior, 174. C. innotatus, 175. C. nipalensis, 176, 177. C. gymnopus, 749.

*Hirundinidæ.* Cypselus nipalensis, v. affinis ? 334. Chætura gigantea ? v. nudipes, *H.* 656. Hirundo nipalensis, 329. H. rupicola, 330. H. rustica, 331. H. subsoccata, 332. H. minuta, 333.

*Todidæ.* Eurystomus calorynx, 248. E. orientalis, 247. Coracias bengalensis, 613. Simoruis (Raya) sericeogula, v. Eurylaimus Dalhousiæ, *James*, 279. S. rubropygia, 280.

*Trogonidæ.* Trogon Hodgsoni, 178, 179.

*Alcedinidæ.* Alcyon capensis ? v. princeps, *H.* 221. A. smyrnensis, 590. A. calipyga, 769. A. guttata, 364. A. rudis, 365. A. bengalensis, 606.

*Meropidæ.* Merops ferugiceps, 560. M. quinticolor, 561. M.

typicus, 746. M. viridis, 875. M. torquatus, 876, (665). Napophila (Bucia) nipalensis, 201, 202. N. meropura, 762.

*Upupidæ.* Upupa Epops? v. indicus, *H.* 132.

*Promeropidæ.* Cinnyris nipalensis, 523, 524. C. miles, 525, 526, 527. C. ignicauda, 529, 530. C. saturata, 531. C. epauletta, 532. C. strigula, 533, 534. C. epimecurus, 828, Arachnothera chrysopus, 528. Myzanthe (Micrura) ignipectus, 393, 394. M. inornata, 395. Pachyglossa melanoxantha, 488.

*Meliphagidæ.* Chloropsis cyanopterus, 250, 251, 252. C. aurifrons, 253.

*Certhidæ.* Certhia hemalayana, Tichodroma phœnicoptera? v. subhemalayana, 372. Sitta castaneoventris, 399. S. nipalensis, 401, 402. S. corallina, 400. Pnoepyga (Tesia) concolor, 847. P. pusilla, 870. P. rufiventer, 457. P. albiventer, 491. Oligura (Tesia) cyaniventer, 489. O. flaviventer, 490. Troglodytes subhemalayanus, 396.

*Luscinidæ.* Orthotomus sutorius, v. ruficapillus, v. sphænura? 387. Decura (Suya) fuliginosa, 881, (106). D. crinigera, v. caudata, 415. Prinia fusca, 388. Cisticola subhemalayana, 437. Salicaria arundinacea? 818. S. affinis, 826. Hippolais Swainsoni, 385. Phyllopneuste xanthoschistos, 380, 381. P. affinis, 838. P. trochilus, 861. P. reguloides, 862. Nivicola schistilatus, 860. Horonis flaviventris, 849. H. fortipes, 850. Neornis? cacharensis, 855. N. strigiceps, 382. N.? flavolivacea, 853. Tribura luteoventris, 851. Horeites brunifrons, 836. H. pollicaris, 848. Abrornis erochroa, 383. A. schisticeps, 468. A. castaneoceps, 469. A. chloropus, v. Regulus modestus, *Auct.* 889. A. xanthogaster, 854. A. tenuiceps? v. regulus? 856. A. pulchrala, 879. Polyodon* (Yuhina) gularis, 309. P. occipitalis, 310. P. nigrimentum, 697. Myzornis pyrrhoura, 694. Ixulus flavicollis, 312. Copsychus saularis, 439. 440. Grillivora longicauda, v. Kittacincla macrura, 438, 731. Phænicura? leucocephala, (g. Chaimarrornis), 297. P. rubricauda, 298

* Polyodons and Myzornis here placed in the Luscinidæ, and Alcopus inserted in the Turdidæ, should have been left, as they were placed by me, in the family of the Meliphagidæ. They are genuine Honey-suckers in habits and in structure and so also is Saroglossa inserted in the sequel under Sturnidæ!

418. P. ruticilla, 403, 405. P. tricolor, 406, 482, 483. P. cæruleocephala, 475. P. schisticeps, 813. P. nipalensis, v. atrata, 404. Tarsiger chrysæus, 408, 409. Larvivora cyanea, 455, 456. L. homochroa, 885. Dimorpha (Siphia) strophiata, 424, 430, 476, 714, D. rubrocyanea, 384. D. leucocyanea, 837. Synornis joulaimus, 421.* S. leucura, (Muscicapa, *Auct.*) 811. Nemura cyanura, 407, N. rufilatus, 484. N. flavolivacea, 884. Calliope pectoralis, 214. C. Lathami, 441. Cyanecula v. Calliope suecoides, 703. Muscisylvia leucura, 215. Bradypterus phænicuroides, 817. Thamnobia scapularis, 213. Rubicola ferrea, 413, 416, 417. Saxicola saturatior, 299. S. rubicola, 300, 301. S. meloleuca, 420. S. insignis, 812. Accentor strophiatus, 414. A. immaculatus, v. nipalensis, 187. A. cachârensis, 873. A. nipalensis, 874. Iora scapularis, 711. Parus sultaneus, 344. P. xanthogenys, 397. P. monticolus, 398. P. jouschistos, 845. P. melalophus, 846. P. dichrous, 852. P.? seriophrys, 863. P. schistinotus, 716. P. æmodius, 830. P. erythrocephalus, 389, 390. Temnoris† (Suthora) atrifrons, 470. T. fulvifrons, 888. Zosterops madaraspatana, 391, 392. Motacilla Hodgsoni, 133, 134, 135. M. boarula, 136, 772. M. xanthoschista, 678, 679. M. locustrina, 775. Budytes calcaratus, 667, 668. B. citreoloides, 732. B. schisticeps, 733, 773. B. fulviventer, 774. B. dubius, v. authoides, 808. Enicurus maculatus, 347. E. fuliginosus, 348. E. schistaceus, 349. E. immaculatus, 350. E. Scouleri, v. heterurus, 698. Anthus maculatus, 435. A. roseaceus, v. rufogularis? 734. A. hortulauus, 791. A. brevirostris, 814. A. pelopus, 877. Cichlops monticolus, v. Corydalla Richardi? 431. C. ubiquitarius, 432, 433. C. thermophilus, 735. C. fortipes, 738.

*Turdidæ*. Chlorisoma venatoria, 210, 211. Myophonus metallicus, 224. M. Temminckii, 225. Pitta cyanoptera, 454. P. rodogaster, 761. Heleornis (Paludicola) nipalensis, 453. Cinclus Pallasii, 240. C. P. young? v. maculatus, 241. Petrocincla cyanota, 584, 585. P. homochroa, 586. P. cyanea, 259. P. erythrogastra

* 421 fæm. 811 mas. of my Joulamus, the leucura of Gmelin and rubeculoides of Sykes who makes the former a Muscicapa and the latter a Saxicola.

† Temnoris next Gould's Paradoxornis and our Heteromorpha and Conostoma also perhaps.

351, 352, 353. Orocetes cinclorhynchus, 359—362. Petrophila turdoides, 587. Zoothera monticola, 268, 269. Turdus pœcilopterus, 184—186. T. oreocincloides, 197. T. atrogularis, 198, 199. T. erythrurus, 200, 720. T.? picaoides, 363. T. rubrocanus, 575. T. Naumannii, 790. T. viscivorus? 832. Merula nivicollis, 182, 183.? Grandala cœlicolor, 844. Oreocincla Whitei, 194—196. O.? rostrata, 833. O.? micropus, 158, s. g. Turdulus. Hemipteron nipalense, 377. Crateropus rufimentum, 187. C. ocellatus, 191. C. moniliger, 192. C. grisauris, 193. C. albogularis, 204. C. leucolophus, 205. C. cærulatus, 493, 494. C. variegatus, 693. C. affinis, 768. C. erythropterus, 820. C. erythrocephalus, 163? Trochalopteron melanura, v. Zanthoc. squamata, *Gould*, 376. T. setifer, 317. T. subunicolor, 842. Timalia pellotis, 315. T. leucotis, 316. T. pileata, 835. Pyctoris hypoleuca, v. Timalia hyp. *Auct.* 704. Mixornis ruficeps, v. Timalia gularis, *Horsf.* 699. Strachyris nigriceps, 356. S. pyrrhops, 410, 411. S. chrysæa, 869 Erpornis* zanthochlora, 760. Malacocercus griseus, v. terræcolor, 371. M.? abornis, 816. M. geochrous, 868. Pomatorhinus erythrogenys, 237. P. schisticeps, 288. P. ruficollis, 239. Keropia striata, 266, 267. Oriolus Traillii, 260, 261. O. galbula, 262. O. melanoris, 263. O. Hodgsoni, 264. O. juv.? strigipectus, 265. Trichophorus xanthogaster, 346. Hemixus flavala, 244. Hypsipetes psaroides, 242. H. viridis, 343. Alcopus (Sibia) picaoides, 246. A. nigriceps, 258. Alcurus melanocephalus, 245. A. nipalensis, 343. Ixops nipalensis, v. Actinodura? *Gould*, 257. Ixos cafer? v. pygæus, 207. I. leucogenys, 208. I. jocosus? v. pyrrhotis, 209.

*Muscicapidæ*. Muscicapa æstigma, 140. M. ciliaris, 141. M.? terræcolor, 286, 287. M. melanops, 288, 289. M. acormus, 478. M. hemileucura, 797. M. leucoschista, 824. Digenea leucomelanura, 419. D. tricolor, 795. Hemipus picæcolor, v. Muscicapa

* Stachyris, Erpornis and Mixornis stood in my arrangement near to Iöra, Chloropsis, &c. among the Brachypods, and Alcopus, as already noted, among the Meliphagidæ, and such I still think are their proper places.

817 Bradypterus, alias Hemiptilon.

699 Mix. ruficeps, alias chloris, alias gularis.

734 Pyctoris, alias Chrysomma. Type, Tymalia hypoleuca, auct.

picata, 285. Hemichelidon ferrugineus, 425. H. fuliginosus, 427. Bainopus irenoides, 284. Chaitaris (Niltava) rubeculoides, 137—139. C. sundara, 142, 422. C. sordidus, 423. C. fuligiventer, 143. Muscipeta paradisea, 281—283. Rhipidura albigula, 426. Myiagra cærulea, v. occipitalis, 730, 485. Cryptolopha poiocephala, 428, 429. Chelidorynx hypoxantha, v. Rhipidura hypoxantha, *Blyth?* 386.

*Ampelidæ.** Leiothrix calipyga, v. furcatus? 354, 355. Certhiparus (Minla) ignitincta, 311, 313. C. castaneceps, 477. Proparus (Siva) vinipectus, 479, 480. P.? chrysæus, 591. Fringilliparus (Mesia) argentauris, 307, 308. Joropus (Siva) strigula, 314. J. nipalensis, 357. J. cyanouropterus, 358. Prosorinia (Cochoa) purpurea, 180, 181, 577. P. viridis, 221, 222. Pteruthius erythronotus, 232, 233. P. xanthochlorus, 446. Heterornis (Cutia) nipalensis, 254, 255. Pericrocotus, v. Phænicornis princeps, 290, 291. P. brevirostris, 292—294. P. peregrinus, 295—297. P. sordidus, 750. Graucalus papuensis? nipalensis, 318, 319. Volvocivora† melaschistos, 517—519. Ocypterus rufiventer, 741. Dicrurus fingah? v. albirictus, 550, 551. D. pyrrhops, 553. D. macrocercus? v. annectans, 675, 676. D. niviventer, 700. D. hemidicrurus, 758. Prepopterus (Chaptia) æneus, v. muscipetoides, 578. Cometes (Chibia) crishna, 564. C. grandis, 567. Melisseus (Bhringa) remifer, 554.

*Laniadæ.* Tephrodornis pelvica, 234, 235. T. leucura, 236. Collurio nipalensis, v. Tephronotus, 230, 231. C. ferrugiceps, 481. C. obscurior, 691. C. jounotus, 815. C. Hardwickii, 871. C. tricolor, 229.

*Corvidæ.* Garrulus lanceolatus, 173. G. bispecularis, 206. Cyanurus? erythrorhynchus, 203. Crypsirina vagabunda, 189. C. sinensis, 190. Conostoma æmodium, 661. Heteromorpha unicolor, 843.‡ Nucifraga hemispila, 219, 220. Corvus macrorhynchus? v. Corone? 218. C. splendens, v. impudicus? Fregilus graculus, 840.

* See Monograph of this group in Corbyn's India Review and in J. A. S.

† Volvocivora to next family or Laniadæ.

‡ Heteromorpha next Paradoxornis and Temnoris.

*Sturnidæ.* Saraglossa spilopterus, 370.* Eulabes v. Gracula religiosa, 302. Pastor roseus, 673, 726. P. pagodarum?, v. nigriceps, 270. P. malabaricus? v. caniceps, 271, 272. P. tristis, 303. P. cristatellus, 304. P. gregicolus, 710. Sturnus indicus, 306. Sternopastor contra, 305.

*Fringillidæ.* Ploceus flavigula, 451. P. melanogaster, 655. P. passerinus, 70. P. atrigula, 743. Coccothraustes melanozanthus, 326, 327. C. carnipes, 328. C. icteroides, 829. Spermestes melanocephalus, 322, 321. S. lineoventer, v. leuconota? 324. S. (Lonchura) acuticauda, 325. S. fuscoluteus, 87. Carduelis spinoides, 442—444. Procarduelis nipalensis, 460, 461. Pyrgyta domestica, 447, 448. P. montana, 449. Gymnoris flavirostris, 864. Fringillauda nemoricola, 450. Emberiza nipalensis, v. erythroptera? 341, 342. E. sordida, v. chlorocephala? 445. E. oinopus, s. g. Ocyris, 473, 474. E. aureola, 793. Heterura sylvana, 436. Alauda leiopus, v. orientalis, 728. A. triborhyncha, v. leiopus? 739. A. dulcivox, 867. Heterops cristatus, 729. Corypha baghaira, 434, 815. Plocealauda typica, 724. Pyrrhulauda cruciger, 809. Propasser rodopepla, 340. P. sordida, young of pulcherrima? 452. P. pulcherrima, v. Pr. rodochroa? 465—467. Pyrrholinota rosæcolor, v. Pyrrh. rosea? 464. Pyrrhoplectes epauletta, 462, 463. Propyrrhula subhemachalana, 471, 472. P. rubeculoides, 831. P. sipahi, 320, 321. Pyrrhula erythrocephala, 335—338. P. nipalensis, 329, 498, 499. Loxia hemalayana, 887.

*Bucerotidæ.* Buceros cinerascens, 58. B. homrai, 599. B. nigralbus, 666. Aceros nipalensis, 600—602.

*Psittacidæ.* Palæornis rhodocephalus, 273, 709. P. mystaceus, v. ponticerianus, 274, 695. P. schisticeps, 275—277. P. nipalensis, 278, 674. P. nigrirostris, 696. P. torquatus? 701, 702. Psittacula pyropyga, v. vernalis? 609, 610.

*Picidæ.* Bucco caniceps, v. viridis? 170. B. cæruligula, 171. B. igniceps, 172. B. grandis, 217. Piculus nipalensis, 161. P. rufifrons, 162. Comeris (Sasia) ochracea, 659. Picus sultaneus, 165, 166. Dryotomus flavigula, v. flavinucha? 167, 168. Chloro-

* Saroglossa to Meliphagidæ; a very interesting form placed in genus Lamprotornis by Vigors, which has led, I suppose, to its disposal here under the Sturnidæ, with which it has no affinity.

nerpes? pyrrhotis, 492, 687. Deudrocopus cathpharius, 154. D. hyperythrus, 151, 142. D. pyriceps, 153. D. majoroides, 155, 156. D. brunnifrous, 157, 158. D. moluccensis, 159, 160. Brachylophus sericollis, 145, 146. B. xanthopygæus, 147. B. squamatus, 148. B. occipitalis, 149, 150. Brachypternus Shorii, 163, 164. B. igniceps, 520. Meiglyptes badius, 169.

*Cuculidæ.* Phænicophaus montanus, 212. Zanclostomus sirki, 226. Oxylophus coromaudus, v. rubrarmus, 611. O. serratoides, 612. Eudynamys orientalis, 249. Centropus pygmæus, 495, 522. C. philippensis, 594, 595, 692. Cuculus hemalayanus? v. bharovus, 501. C. canorus, 503, 506. C. micropterus, 504, 507. C. saturatus, 505, 690. C. sparverioides, 509—511. C. niger? v. pyrrommatus, 512, 514. C. brevipennis, 513, 689. C. nisicolor, 872. Pseudornis dicruroides, 502. Chalcites xanthorhynchus, 515, 516.

*Columbidæ.* Vinago spheuura, 93, 94. V. militaris, 104, 105. Ptilonopus turturoides, 100, 101. P. macronotus, 102. Romeris (Toria) aromatica, 103, 688. Rhinopus (Ducula) insignis, 216, 92. Deudrotreron Hodgsoni, 98, 99. Columba pulchrala, 88, 89. C. leuconota, 95. C. domestica, var. 97. C.? pulchricollis, 737. Monornis perpulchra, 91. Turtur vitticollis, 96. T. douraca, 107. Coccyzura tusalia, 663. Œna murmensis, 747.

*Phasianidæ.* Crossoptilon tibetanum, 785. Phasianus Wallichii, 76—78. Epomia Amherstii, 85. E. picta, 86. Euplocomus leucomelas, 79, 80, 771. Gallus Bankiva, 74, 75. Tragopan satyrus, 69, 72. Lophophorus Impeyanus, v. refulgens, 73. Gallophasis pucrasia, 68, 71.* Tetraogallus Nigellii, 781. Ithaginis cruentatus, 81—84. Tetraoperdix (Lerwa) uivicola, 108, 109. Francolinus gularis, 378. F. orientalis, 379. F. vulgaris? v. brevipes, 630—632, Pyctes (Chacura) chukor, 110. Arboricola olivacea, v. torqueola. 111, 113, 114. A. rufipes, 112. Coturnix textilis? v. pluvialis, 119, 120. C. philippensis, 128, 129. C. dactylisonaus? v. indicus, 130, 131. Perdicula rubicola, 763, 764. Hemipodius joudera, 121. H. Dussumieri? v. variabilis, 122, 123. H. taigur? v. plumbipes, 126, 127. Pterocles arenarius, 784. P. pictus, 782. P. exustus, 783.

* Gallophasis was originally applied by me to the Káliches, which are, in structure and in geographic distribution, a most perfect link between tropical Gallus and boreal Phasianus.

*Otidæ.* Otis bengalensis, v. deliciosa, 115. O. aurita, 116, 117. O. nigriceps, 778.

*Charadridæ.* Œdicnemus crepitans, 53. Pseudops griseus, 118. Cursorius tarayensis, 574. Glareola nipalensis, v. cinerascens, 658. G. thermophila, v. longipes, 799. G. gangetica, 825. Squatarola cinerea, 672. Vanellus cristatus, 625. Philomachus ventralis, v. spinosus, 227. Sarciophorus fuscus, 810. Lobivanellus goensis, 228. Charadrius pluvialis, 535, 536. C. rufinus, 669. C. subrufinus, 124, 125. Hiaticula minor, 628. Hæmatopus ostralegus, 807.

*Ardeidæ.* Anthropoides virgo, 588. Ardea purpurea, 592. A. insignis, 645. A. cinerea, 646. Egretta chloriceps, v. virescens, *Auct.* 622. E. cinnamomea, 623, 624. E. flavicans, v. russata ? 638, 647. E. nigrirostris, 639, 641. E. maronata, 642—644. E. modesta, 794. Nyctiardea europea, 635—637 Platalea pyrrhops, 144. Ciconia leucocephala ? v. biclavata, 521. C. nigra, 620. Mycteria australis, 801. Osteorophea immigratoria, 713. Tantalus rodopteron, v. leucocephalus ? 800. Ibis falcinellus, 571. I. (Pseudibis) papillosa, 619. I. aimolene, v. melanocephalus, 865.

*Scolopacidæ.* Numenius arquata, 614. N. arquatula, 615. N. phæopus, 616. Limosa melanura, 537. Clorhynchus strophiatus, 576. Totanus calidris, 367. T. macularius ? v. auratus, 368. T. glareola, 369, 745. T. glottoides, 549. T. hypoleucos, 557. T. ochropus, 744. T. glareoides, 748. T. fuscus, 798. Recurvirostra avocetta, 573. Himantopus melanopterus, 516. Tringa pusilla ? v. Temminckii ? 629. T. variabilis, 740. T. minuta, 751, 752. Machetes optatus, 366, 823. M. pugnax ? 412, 597. Rhynchæa capensis ? v. indica, 538, 539. Gallinago nemoricola, 540, 541. G. media ? v. uniclavata, 542, 543. G. heterura, v. biclavata, 544, 545. G. solitaria, 547, 548. G. gallinula, 608. Scolopax rusticola, 546.

*Palamedidæ.* Parra sinensis, 563. P. superciliosa, 570. P. indica, 719. P. phœnicura, 572.

*Rallidæ.* Zapornia flammiceps, 374, 375. Z. pusilla, v. Bailloni, 568, 569. Z. thermophila, 759. Z. nigrolineata, 765. Porphyrio hyacinthicus, 562, 662. Gallinula chloropus, 633, 634. Fulica atra, 621.

*Anatidæ.* Anser rubrirostris, 579. A. indicus, 593. Mycrocygna girra, 796. Dendrocygna arcuata, 581. Tadorna vulpanser, 580.

T. rutila, 803. T.? pnoe, 819. Anas mail, 500. A. boschas, 653. A.? vitticeps, 677. Rhynchaspis clypeata, 651, 652. Dafila caudacuta, 459, 454. Mareca pœcilorhyncha, 792. Querquedula crecca, 617, 618. Q. vulgaris, 767. Fuligula vulgaris, 373. F.? cheonea, 458. F. nyroca, 648, 649. F. leucophthalmos? 650. F. caryophyllacea, 664. F. rufina, 686, 822. F. cristata, 712. Mergus serrator, 626, 627. Cygnus ferus, the wild swan, whereof, strange to say, I procured a sample in the valley of Nepal during a most unusually inclement winter.

*Podicipedæ.* Podiceps minor, v. pandubia, 558. P. cristatus, 834.

*Laridæ.* Xema ridibunda, 566. X. pallida, 857. Sterna roseata, 565.

*Pelecanidæ.* Pelecanus gangeticus, 582. P. calirhynchus, 92. Carbo pygmæus, 552. C. rapteusis, 555. C. javanica? v. raptensis, 559. C. leucocephala, 596. Plotus melanogaster, 655.

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The list consists of 652 species: 89 being Raptorial; 407 Passerine; 44 Gallinaceous; 77 Wading; and 35 Natatorial Birds.

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*Notes on Northern Cachar.—By Lieut.* R. Stewart, *22nd Regt., B. N. I.*

North Cachar, including that portion of the country called Toolaram Sonapaty's, is bounded on the north by the rivers Jumoonah and Hurriahján, which separate it from the Assam district of Nowgong. On the east the river Dhunseeree, rising among the Burrail mountains and flowing northward, is our frontier with the independent tribes of Angami and Kutcha Nagas. A huge range of mountains called the Burrail, running directly east and west forms the line of demarkation on the south, with Cachar Proper. And on the west, the Cossilee, and one of its small tributaries called the Umpúng, rising in the Burrail range, and flowing northward, divide it from the Cossiah and Jynteah hill country.

The form enclosed by these boundaries is that of a rude square, of about 3000 square miles in area: all lying within the water-shed of the Birhampooter, and on its left bank, though removed from the stream toward the uplands. This tract is for the

most part mountainous, and covered with dense forest and bamboo jungle, intersected by numerous streams which find their rise in the Burrail and lower ranges, and flow towards the plains to the north.

The population, consisting in all of about 30,000 souls, is composed of no less than six different tribes, all having distinct languages, manners and customs. They are thinly scattered throughout the country in small village communities, the greater part being located towards the south, close to the high range; vast belts of forest in the north and the whole line of frontier to the east, being left unoccupied: the first on account of the intricacy and impracticability of the country, and the second from the dread of the ravages of the Kutcha and Angami Naga tribes.

North Cachar is most easily approached from the southern side, that is from Cachar Proper. There are no less than three distinct routes from Silchar to Apáloo, the sudder station of the district.

The shortest of these is that viâ Oodharbund, a village in the plains, about ten miles north of Cachar. On leaving this village, the road proceeds for some way up the bed of the Madoora river, and then, after surmounting the lower ranges of hills lying at the foot of the Burrail, boldly runs up the face of those mountains themselves, nor does it seek, by zigzaging or circumvention, any means of alleviating the toughness of the "pull" which in some places is tremendous.

Nothing can be less interesting than a journey by this route. The moment the traveller has left Oodharbund, he finds himself walking between two high walls of jungle, which it is impossible for the eye to pierce. This jungle in the lower ranges is composed of a small species of bamboo, the stalks growing exceedingly close to one another: higher up, the first striking change is that of a larger bamboo, which takes the place of the smaller kind, and grows in clumps instead of singly. Interspersed with these are gigantic bamboos growing to the height of sixty or seventy feet, and measuring eight or ten inches in diameter at their base. When half way up the Burrail range, bamboos of all kinds give place to a timber forest, where huge trees of various sorts abound. Here, indeed, some scenes of great beauty present themselves. The rich and varie-

gated foliage of the trees, the huge, gnarled and moss-grown trunks and branches, and the profusion of creepers, which, rope-like, bind all the trees into a most inextricable tangle over head, and hang in quaint festoons from the higher branches, might well form the subject of an exquisite painting. But a great amount of dampness prevails throughout, and the eye gets wearied with gazing on perpetual sylvan vistas without any thing of stirring life to relieve the tedium. So thick is the forest that at no place but one, on the whole line of road up the face of the hill, are the plains of Cachar visible. At this place the eye enjoys the freedom for a short time given to it, although the view itself presents nothing particularly interesting. Upon accomplishing the descent on the northern side of the range, which is marked by the same changes of vegetation as that on the south, North Cachar may fairly be said to have been reached. The road proceeds thence to the station of Apáloo, crossing the Jatinga river, which is here a small stream, then passing over and running along small ranges of hills covered with dense bamboo jungle, and crossing the rivers Dyung and Mahour. The journey to Apáloo by this route may be performed with care in five days, and on an emergency may be accomplished in three.

The next road is that up the bed of the Jatinga river, and is reached from Silchar viâ Burkhola, a village in the plains, about twelve miles north-west of the station. After leaving Burkhola, the road crosses a low range of hills, and descending on the river pursues its course along the banks or in the bed of the stream, and by an almost imperceptible ascent up the valley reaches that spot, where the road by Oodharbund crossed the river, from which point both routes unite.

Eight miles is added to the distance if this route be chosen in preference to that by Oodharbund, but the traveller is relieved from the equivalent of twice that distance in fatigue arising from the avoidance of abrupt ascents.

If a good road be ever constructed between Silchar and Apáloo, this is indisputably the route which should be adopted; although some obstructions which now exist, would have to be removed. Huge rocks block up the whole of the bed of the stream and the valley for about three miles, along the road. A few hundred pounds

of gun-powder would, however, soon clear a road through them, and a greater outlay might also, I think, serve to open out the navigation of the river itself to rafts, by means of which the fine timbers growing in the valley might be floated down to market during the rainy months. Two days' journey up the river, brings us to a wide portion of the valley covered with forest, and abounding in fine Jharul timber of great value. The valley in the neighbourhood of this spot, which is called the Megpur forest is thickly interspersed with Cachâree and Kookie villages, and it is pitiful to see the ruthless spoliation which the noble trees are undergoing at the hands of these people; the timber after being cut down, being left to rot or burned for the purpose of enriching the soil.

The scenery on this route is a great improvement on that viâ Oodharbund, the river forming an ever-varying and pleasant feature. The banks are, in some places, abrupt and rocky, rising to the height of many feet; in other places, such as the Megpur forest, the valley widens and forest scenery comes into play.

The third route from Cachar is one seldom or never used, although I have penetrated into the country by it myself. It is much longer than the other two, occupying, at the least, and under favourable circumstances, five days. It proceeds viâ Lukhipur, a village in the plains some sixteen miles east of Silchar, and on reaching a low range of hills called the Hoorung, skirts along them in a northerly direction, until it arrives at the banks of the river Chinám, along the bed of which it proceeds until it reaches the hill on which Baladhun (a large Naga village) is situated, when it branches off up the bed of one of its tributaries, and pursuing its course up to its very source on the summits of the Burrail, descends through a gorge, right down upon Apáloo itself.

Miles of this road, when traversing the low lands in the neighbourhood of the Hoorung range, lie across large morasses of thick alluvial mud: here footing is obtained by means of what are called paddy-bridges, which consist of a series of bamboos lashed two and two together, in the form of an × and planted firmly in the ground: these again are connected at their junctions by other bamboos laid across, and lashed thereto, along which the traveller must poise himself, as best he can. It is astonishing to see how

carelessly those who are accustomed to this system, trudge along this frail framework, where the footing, consisting as it frequently does of but one bamboo, is exceedingly precarious. Coolies laden with heavy burdens, pass as securely as if on terra firma.

The ascents on this route are also very considerable, especially the last one up the Burrail. The scenery is in many parts very interesting. The Chinám is a large mountain torrent, and both that river and its tributary abound in scenes highly picturesque.

The approach from Nowgong in Assam is, I am told, an excessively tedious one as well as uninteresting. It occupies between a week and ten days, lies for three days in the plains, after which it enters an extensive and unhealthy terai, crosses a number of low ranges of hills, and gradually encountering higher ones, reaches at length the more central portion of the district.

Ready access can, however, be had during the rains and, indeed through greater part of the year, to the more northern parts of the district, by means of the rivers Copilee, Dyung and Dhunseeree, which are navigable, to boats of small burden and rafts, a considerable way into the interior.

The approach from Cherrapunji lies viâ Kálápáni and through the independent territory of Rájá Sing Mánik, and part of Jynteah hill. The scenery on this route is described as very beautiful, and it passes through the most thickly populated part of the hills. Yet it is little frequented except by a few Cossiahs, who venture into North Cachar for the purpose of buying cotton from the Kookies. There appears to be a marked difference between the character of the Cossiah and Jynteah hills and those of Northern Cachar, the former being grass covered, with forest bottoms, and the latter overgrown with bamboo jungle, and having the forests chiefly on a high level instead of a low one. This change does not take place gradually along the route, but the moment the Copilee, (which would seem to be the natural boundary between the two countries,) is crossed, it is at once perceptible.

A route is said to exist from Munnipur to North Cachar, lying through part of the country of the Kutcha Nagas. It is described as being a week's march over very difficult country, but I have no further information regarding it.

It must be understood that all the roads mentioned by me, are mere foot-paths cleared through the jungle, and perfectly impassable to all but foot-passengers. It would be impossible for even a hill pony to go along many of them, and no one could venture to ride for more than a mile or two at a stretch on favorable ground, on any one of them. The best method of proceeding, therefore, is by those means with which nature has supplied us; and, difficult and irksome as walking in such country is, it will be found preferable to the only other means of locomotion that exists, and to which those incapable of being on their legs for six hours a day, are obliged to resort. Palanquins and tonjons are out of the question. Independently of their being no bearers to carry them, it would be impossible to convey them round the sharp corners of the paths as they pass between rocks and trees, and still more so, along the faces of precipices, where there is only footing for a single individual at a time. If it is necessary to be carried, a slight litter of bamboos is constructed, in which there is space for a person to sit tailor-fashion, and in this position and no other he is obliged to sit during a six hours' daily journey, while twelve or sixteen coolies support and carry him along, at the rate of about two miles an hour.

In marching in the hills, by such foot-paths, six hours a day including one hour's halt, must be devoted to the road, as the pace can never exceed three miles an hour, and seldom even come up to it. A start after breakfast, at about 8 or 9 o'clock, brings you up to your ground, removed about ten or fifteen miles from the last encamping place, at 3 or 4 in the afternoon. The coolies who accompany you on the march, are then set about to erect a temporary hut, which they do in an incredibly short time, and in the course of two hours you are lodged in a tenement impervious to sun and rain.

The general appearance of N. Cachar when looked down upon from one of the higher ranges, is that of a number of low worm-like hills most intricately intertwined, and covered with dense bamboo jungle which lies here and there felled in large and small patches, on which cultivation is carried on.

Viewed from a distance, the height of the bamboos being uniform,

the regularity and eveuness of their tops has the appearance of lawn-like grass, aud a huge tree (perhaps the remnant of some former forest) rising here aud there, in the jungle, and towering high above the tops of the bamboos, adds much to the deception. This illusion is, however, completely destroyed when the descent has been made, and it is fouud that instead of traversing the smooth grass of a park, it is necessary to proceed along a road wedged in between two walls of bamboo, thirty feet high, stumbliug at every step owing to the irregularity of the ground.

As we proceed north, bamboo jungle, though common, is not so frequent: its place is gradually taken by small trees with which it is often interspersed, aud which cover the low hills from summit to base, and by the time we reach the plains we are iu high tree forest, of which the terai is composed.

The whole of Toolaram's couutry may be characterised as 1800 square miles of tree jungle, 400 miles of which are in the plains, and form part of the terai, the remainder being heaved up into a series of low ridges and undulating hills, ouly fourteen square miles of the whole being under cultivation. Yet the country is extremely fertile, as all tracts must be, which lie at the foot of lofty ranges.

Villages of Cucharees, Kookies and Nagas are pretty plentifully scattered about the southern and central portions of the district, and sometimes, when perched iu promineut places, as those of the Nagas invariably are, add much to the interest of the view, which has generally too much of sameness iu it to be pleasing.

The Burrail rauge running along the entire southeru boundary of the district, is the most stupeudous and beautiful feature in it. These mountaius are very irregular in their formation, and throw out peaks and spurs and ridges in all directions, their summits and sides for a cousiderable distance being crowned with glorious timber forests. Nothing can exceed the beauty of these hills, as viewed from certain positions and in certain lights: the effect of the dark-coloured foliage staudiug out iu relief against a clear sky showing minutely the picturesque irregularity of their outline, is not equalled by any other hill-sceuery I have ever met with.

The height of these mountains is, I should say, about 2500 feet

above the general level of the country which, again, may be about 1500 feet above the level of the sea, many of the peaks of the Burrail may rise, however, to 5000 feet above the sea or even more.

On clear days the snowy ranges of the Bhootan mountains, on the northern side of the Burhamputer, are distinctly visible, but at too great a distance to produce any marked effect, being generally much obscured by the low clouds which hang above the horizon.

The climate of North Cachar, is on the whole very agreeable, the temperature of those places in it which are at all raised, being, on an average, at least 8° Fahrenheit below that of the plains of Cachar, the maximum temperature, during the hottest months, never exceeding 85°, and the minimum during the same time 72°. The chief objection to the district as a residence, is the constant violent wind that blows upon it from the south, through the gorges of the Burrail range. This wind would appear to come directly from the plains of Cachar, and yet Cachar is far from being a windy district, and, with the exception of a few storms, at the end of the cold weather, enjoys almost a perpetual calm.

When I first visited these hills, the season being that in which the jungle (cleared for the purposes of cultivation) is burned, huge fires were prevalent throughout the country. The magnitude and fierceness of these fires are beyond anything I ever saw or heard of—not even the fire of London, or the blazing Prairies of America can be compared with them. Whole mountains are in flames, tongues of flame fifty or sixty feet in height leaping up all around them. I thought, possibly, these great conflagrations, by rarifying the air in their immediate neighbourhood to a considerable extent, might cause a rush of wind to supply the place of the atmosphere thus exhausted. But the violent winds continued for months after the cleared jungle was all burned down, and I was forced to give up my theory.

I begin to think that this constant wind must be an upper current of sea-breeze from the Bay of Bengal, which passes over the low hills of Tipperah, and the plains of Cachar, until it is broken by the high Burrail range, when it precipitates itself down the gorges and valleys of those mountains into the country beyond. But I have no argument to offer in support of this theory.

My observations of the climate have hitherto applied only to Apáloo, and those parts of the hills considerably above the general level of the country, though not on the greatest heights. Here the climate is healthy and with the exception of the wind, pleasant. It is far otherwise, however, in the valleys and dells between the hills, and generally in the whole tract to the north, including Toolaram's country. There the rankness of the vegetation and the malaria emitted from decaying vegetable matter, spreads disease and death, even among those who from long residence have become accustomed to such localities. A European or native of the plains has little chance of escaping with his life, should he be detained for any time in the low grounds.

Toolaram's country must, I fancy, be the most insalubrious place in the whole world. Independently of the effects of the malaria, all epidemics, such as cholera and small-pox are prevalent, and it is not astonishing, therefore, that we find a population of 6200 persons only, occupying such an extensive tract, although the paucity of people has been ascribed to the misgovernment of the late rulers.

North Cachar is not, apparently, visited with such floods of rain as the Cossiah hills, although of course a greater quantity must fall among mountains than on the plains. Yet I think there can be but a slight difference between the fall in the plains of Cachar, and that at Apáloo. Clouds hang pretty constantly on the peaks of the hills, and a considerable amount of rain may fall on the higher levels, but the torrents carry it all off, and no effect is produced by the fall on the lower ground.

Dense fogs and mists are very frequent, and the climate is every where a damp one. Books, furniture, dresses, &c. stand no chance with it, although it has been found to agree pretty well with both Europeans and natives of the plains; the latter, however, suffer greatly on first coming up, being subject to fevers, and a mild form of dysentery; this may, however, be induced more by a change in diet, the hill rice differing considerably from that of the plains, than by any baneful effect of the climate.

There are very few remarkable places in North Cachar, nothing interesting concerning the history of the country being known, all that *is* known being confined within the last half century.

The entire district, as it now stands, formed a portion of the dominions of the Rájáhs of Cachar, who were in the habit of exacting revenue, consisting of ivory, wax, rice, and other articles of produce, from all the mountaineers east of Jynteah to Manipur. On the death of Gobind Chunder the last Rájáh of Cachar, in default of successors, Cachar lapsed to the British Government, in the year 1830, and with it we also became possessed of the mountainous tract of country to the north. Circumstances, however, which had occurred during the latest years of the native sovereignty of the province, induced us to take but a small part of the hilly country immediately under our own government.

In the reign of Gobind Chunder, a menial in his service of the name of Kohee Dau pushed himself sufficiently forward to be appointed governor of the hill country attached to the kingdom. Once removed from his master he had influence sufficient to instigate a successful rebellion, and establish his own independence, which in due time was acknowledged by Gobind Chunder himself. But shortly afterwards, being decoyed down to the plains, he was treacherously assassinated, at the hands of his former master. His son Toolaram escaped, and for a long time led a roving life in the hills, maintaining his independence, notwithstanding the forces sent against him by the Rájáh of Cachar.

In 1824 Toolaram joined the Burmese in their invasion of Cachar, and drank his full meed of revenge in the fire and sword which they spread through the kingdom of his enemy. The alliance of a man like Toolaram must have been of great service to the Burmese in their enterprise. His local knowledge alone was worth half an army to an invading force such as they were, and indeed without his aid it would have been impossible for them to have made good their retreat before our army, which they did through the hills in the N. E. corner of Cachar, a place called "Bágna kóna" to this day in memory of the flight.

On the withdrawal of the Burmese, Toolaram was left in his old position as regards his territory, though better able to resist his old enemy, Gobind Chunder, who nevertheless made frequent attempts to expel him.

In 1828, Toolaram, though able to withstand all attacks from

without, was obliged to succumb to treachery from within, and a much trusted cousin of his seized his government, and compelled him to fly for refuge to Jynteah.

In 1829 Toolaram, having obtained the assistance of Gumbheer Singh, Rájáh of Munipur, retook his country, forcing his cousin to fly for protection to the Rájáh of Cachar.

After this an interference took place on the part of the British Government, which obliged Gobind Chunder to make over certain parts of the hills to Toolaram. Gobind Chunder was murdered in 1830, and Cachar lapsed to the English, Toolaram still holding his place, and being kept in possession by us against further attempts made by his cousin to dethrone him.

In 1833 Toolaram executed two British subjects, on a charge of having conspired against his life. For this act he was tried at Gowhatti in Assam, and acquitted, upon it being shown that, as an independent chief, he had power of life and death over malefactors in his own territory.

But care was taken to reduce this power, and by a treaty of 1834 his dominions were curtailed and his power limited to the trial of petty cases within them, all heinous offences being rendered subject to our officials alone. He was moreover called upon to pay an annual tribute of four pair of elephant tusks, and, to make him more dependent, became the recipient of a pension of Rs. 50 per month.

In 1844 Toolaram, having become infirm and old, prayed that Government would transfer the management of his country to his two sons; this was done, and until 1853 it remained in their hands.

But the young men did not appear to possess administrative abilities. They quarrelled among one another, and the business of the state was allowed to get into confusion. The inhabitants were oppressed and fled, and the country became a place of refuge for all the great criminals and defaulters of the neighbouring districts, who, once across the boundary, could never again be heard of. Every article of the treaty of 1834 having been frequently broken by these rulers, it was thought incumbent upon the death of Toolaram, and consequent on the event of one of his sons losing his life in waging a war, in direct contravention to the above treaty, to put a stop to the regular succession, and annex the country to our own dominions.

This measure was very skilfully carried out by Lieut. Bivar in the cold weather of 1853-54, and it is to him that I am indebted for my information regarding the country.

On the death of Gobind Chunder, therefore, it was only a small belt of the hill-country, about 1200 square miles, that came into our possession, and this tract was placed under the jurisdiction of the Superintendent of Cachar. In 1839 it was transferred to the Assam authorities, it being supposed, that they were better able to protect it from the ravages of the Angami Nagas, which had become frequent and bloody—and now an assistant to the Commissioner of Assam, administers to the whole tract, including Toolaram's territory. Although undoubtedly a portion of the valley of Assam, I doubt if the transfer from the jurisdiction of Cachar was attended with much benefit, access from the latter place being so much easier, and the distance shorter, than that from the nearest station in Assam.

The deputation of an European officer specially to these hills has however been of the greatest advantage, as it has put a stop to blood-feuds and internal dissensions among the tribes, which were frequent under the old regime, and continued to be so till very lately.

At first a small police thannah was located at a Naga village called Hussung Hajoo, presided over by a darogah, who, under the Assistant Commissioner of Nowgong, had the whole charge of the district. Great irregularities and some oppression arose from this system. Nor was the peace of the country properly maintained, and although European officers used to make periodical tours through the hills, yet murders and affrays among the Nagas continued to take place even during their presence in the country. Moreover it was necessary that a larger body of troops should be located in the country, and, as offensive measures had ceased to be our policy towards the Angami Nagas, it was determined to take up a line of defence along the frontier.

For this purpose Lt. Bivar arrived in N. Cachar in 1851-52, and took up a position at Goomai-Goojoo, a small Naga village, on an isolated hill about 3,000 feet above the level of the sea. This station, a very fine one in most respects, was afterwards abandoned, owing to a scarcity of water, and to the fact that after Toolaram's

country had been annexed, it became no longer a central spot, and Apáloo, another Naga village, situated on some table ground, on one of the ridges of the Burrail, about twelve miles east of Goomai-Goojoo, was chosen as the sudder station of the district.

Apáloo lies about 2000 feet above the level of the sea, and is situated on a fine grassy ridge, having abundance of water close at hand. A gorge in the Burrail range to the south, however, opens directly upon it, and accordingly it is subject to the most constant and violent winds. Apáloo is on the southern border of the late Toolaram's country, being situated within a mile of the sources of the Mahour on its right bank.

About five miles to the south of Apáloo, rises one of the highest peaks of the Burrail. There is something very grand about this mountain when contemplated from the ridge on which Apáloo is situated. Resting on a very broad base, it rises at a small angle, and terminates in a point at the top, the whole expanse from summit to base almost being covered with luxuriant and variegated forest. The ascent on the northern side is gradual, but on the southern the declivity is almost perpendicular. This mountain is called "Mahá Deo," from which it may be imagined that bráhmanical superstition had something to say to its christening. I believe the ruins of a temple are still to be seen near the top, clearly indicating that at one time it must have been a place of religious resort to Hindus, although not now held sacred by them.

About twelve or sixteen miles north-west of Apáloo the valley of the Mahour river widens, and forms a basin, surrounded by hills, and densely overgrown with jungle.

During the reign of Gobind Chunder, the late Ráját of Cachar, Tumroo Dhur, an uncle of his, was sent to North Cachar, for the purpose of building a city for the occasional habitation of the king. This spot called Maibung was the site chosen for the intended city, the building of which was duly commenced, but owing to the death of Tumroo Dhur was eventually abandoned. The place must be very unhealthy, being a low dell redolent of the malaria generated from rank and decaying vegetation. The remains of the unfinished city can now only be traced from some brick foundations evidently intended for a walled fortification, and one solitary temple

hewn out of solid sandstone of diminutive and ill-formed proportions. A few bél fruit trees, providently planted by the would-be founders, flourish, which, as the fruit is considered an infallible remedy for many diseases, would have been very useful to the inhabitants in such an unhealthy situation.

North Cachar, considering that it is a vast tract of rough irregular and intricate mountains, is nevertheless a productive country, and crops are raised on the hill sides, with very little more labour than what is required in cutting down the jungles.

Rice of course is the staple produce—the method of cultivation, I shall afterwards describe. The rice varies in quality, and some sorts are very inferior, others again are much better than the generality of rice grown in the plains. Cotton of a very excellent quality is grown by most of the inhabitants, and is perhaps the only article exported in great quantities. Besides these, the jooms are planted with common sorts of vegetables, such as byguns, kuddoos, cucumbers, &c.; tobacco, sugar-cane, Indian corn, and the castor-oil plant all grow well, and are cultivated, but to no great extent.

The chief natural productions of the country are bamboos and timber. Both of these are abundant, but can be turned to little or no use, owing to the difficulties of conveyance. Coal and limestone are known to exist in different parts of the district, but for the same reason are unavailable beyond their immediate neighbourhood. Salt wells are found in many places throughout North Cachar, but chiefly in the neighbourhood of a Cachari village called Semkur. Two gallons of the brine yield about a pound of salt, which is of tolerable quality, but prized only by the hill-people. Bees-wax is found in abundance among the rocky hills and in the forests, and is taken down for sale to the plains. Iron in small quantities is obtained from clay, and is manufactured by the inhabitants into spears and daos. Elephants abound in the jungles of Toolaram's country, and ivory might be procured in any quantity; but there are few hunters in those parts, consequently only a very little finds its way to the markets. Lac-dye of a good quality is found, and used by the inhabitants in dying, as is also wild indigo. A strong coarse silk cloth is made by

Cacharies from the silk of the eria-worm; but the manufacture is not general among the tribes.

Edible fruits of different kinds are found in the jungles, but none are cultivated; among them is the mango which grows to the size of a turkey's egg, possesses a fine flavour, and is free from the grubs, which make such attacks on that fruit in the plains. The peach also grows in a wild state, but never reaches maturity; and wild plantains are common, but the inhabitants prefer eating the flower and the pith of the trunk to the mature fruit.

The Natural History of North Cachar is most diversified, and I am confident that the researches of any scientific zoologist would be attended with some important discoveries. I shall merely, without attention to classification, name some of the animals which are known to exist in the country.

I have seen the hoolook, or black ape, and their cry resounds through the forests; there is another ape of a white colour, and two or three kinds of monkeys. I have also met with the "gherminda billi," a sort of sloth.

The elephant, rhinoceros, and wild buffalo are common in the jungles and jheels to the north. The methin, or wild cow, is also indigenous and frequents the hilly jungles in the district, as do the sámbre, spotted-deer, hog-deer, ravine-deer, and barking-deer. The antelope even is sometimes seen. Wild hogs and porcupines are common. Tigers, bears, leopards, and jungle-cats prevail throughout the whole country, and it is considered unsafe to go out at night by reason of them. The hyæna, wolf, jackal, fox, and wild dog, are to be met with in different localities—the jackal is, however, seldom seen in the hills. Civets and many kinds of ferrets and weasles abound. Flying squirrels and squirrels of several sorts inhabit the forests; of the latter I have seen four distinct kinds, black, gray, brown and green. Bamboo or lion-rats, moles, musk-rats, common rats and mice, are pestilently numerous, especially the three latter.

Alligators frequent the rivers, where they are large enough, to the north, and fish of numerous kinds, from those 80 or 100lbs. in weight down to the smallest minnow, are caught in all the rivers. The rohoo and máháseer, are the only kinds that I can distin-

guish. Prawns and crabs, also exist, as well as turtles and tortoises. some of very large size, and otters. I have seen frogs of many kinds including the flying-frog and the tree-frog. The gósámp, the armadillo, the chamelion and lizards of great variety both in size and colour are to be found in most parts.

Snakes of an infinite number of kinds, from the huge boa to those not larger than a small earth-worm, are found in the jungles—some of these possess great beauty, and I am certain many are not classified. Scorpions exist, but are scarce; centipedes are plentiful. Earth-worms, leeches, snails, slugs of several varieties, and caterpillars of every size and colour, are common.

Of birds, the vulture and kite are but rarely seen, nor are ravens and crows common. But eagles build their nests on the crags, and there are many species of hawks. I have seen no less than three kinds of toucans, and they are numerous. Peacocks and wild cocks crow throughout the country, and there are several kinds of pheasants, and partridges, pigeons and doves. Wild fowl, geese and ducks, teel and snipe, water-hens, &c. frequent the jheels to the north in their season, but are not found on the higher levels at any time. Jays and king-crows, parrots, parroquets and lutkuns are common, and their feathers are much prized as ornaments by the rude inhabitants; mangoe-birds, and many other kinds which I cannot distinguish, are to be met with in the woods; yet this is the department in Natural History in which North Cachar is most deficient. A day's journey may be travelled in the forests, without once hearing a note or seeing a bird.

Butterflies and moths of every colour and size abound, likewise insects of all sorts. Wasps, bees, beetles, bugs, fleas and lice are more than common. The blue-beetle, whose wings are considered so ornamental, is very plentiful. Flies, from the large wood-fly that makes a noise like a frog, including the dragon-fly, and the elephant-fly which draws blood by a bite, to the smallest gnat, are inconveniently abundant, as are mosquitoes and sand-flies—also pipsás.

The animals domesticated by the inhabitants are methins, buffaloes, cows, goats, and pigs, together with the common domestic fowl. Other animals have been brought up from the plains how-

ever, and thrive; among these are ponies, sheep, rabbits, geese, ducks, pigeons, &c.

I must not omit to remark a notion which prevails among the inhabitants of the country and more generally among those who have, comparatively speaking, recently become settlers, and that is, that there is something detrimental either in the climate or the locality to the proper generation, both of the human species, and of animals. As proofs of this fact they bring forward numerous instances of barrenness in women, and in domesticated animals, as well as miscarriages and production of abortions. I cannot pretend to account for this phenomenon, otherwise than, as regards the human species, from the fact that the women of the tribes forming the population of the country have ascribed to them the most laborious occupations both at home, and in the field; their duties do not even cease at times of advanced pregnancy, and this may give cause to part of the accusation brought against the district, but that part of the charge relating to barrenness, and the whole as applied to animals, remains unanswered.

North Cachar is not a country that pays! Extensive as the tract is, and fruitful and fertile though it be in a certain measure and considering that it is a mountainous country—yet the inhabitants are rude and unlettered, have little knowledge of commerce, and no wish or care to raise more produce than that which is required for their own consumption. The few articles that are exported are bartered for salt, and iron, and a few paltry ornaments, Manchester goods, even, not having found their way to a place so remote.

With the exception of a little ground in the plains to the north, there is no land settlement whatever in the district, each village cutting down jungles in its own vicinity and cultivating thereon. The villages are situated too far from one another to give rise to many disputes regarding the right of soil, and moreover there is a tacit understanding among them as to the right of possession of certain grounds. The only tax levied by Government is a house-tax, at the rate of one rupee per annum per house. The district is divided into different mouzahs, for each of which a mouzahdar is appointed, who is responsible for the collection of the revenue, and

receives a commission of 2 annas on each rupee collected, or 12½ per cent. The gross revenue of the district does not exceed Rs. 8,500, and from this the commission has to be deducted. The revenue of the late Toolarám's country, recently annexed and included in the above, is about Rs. 1,800, out of which the surviving members of his family, who still reside at Mohoodunga, are pensioned to the extent of Rs. 1,000. The expense of administration, including the pay of the troops, &c. must exceed the receipts by about twenty times.

Having described, in rather a cursory and unconnected manner it must be confessed, the general character and state of the country, I next proceed to notice the inhabitants. No where is there a more extended field for the researches of the ethnologist than in North Cachar and its immediate neighbourhood, and the field still remains open, for I am not aware of any published account, wherein an attempt has been made to establish the cause of the astounding fact that at the present moment in the small portion of the world comprised in the valleys of the Barhampooter and Soorma, together with a few adjacent hills, there exist upwards of twenty distinct tribes, each speaking a language unintelligible to the other, and distinguished by manners and customs in which there is little in common, and yet it is plainly perceptible, from the cast of the countenance alone, marked as it is by the prominence of certain features, that most of these tribes have, at some time or other, been members of one and the same family.

Some cause, within a much more recent date, as mighty as that of Babel, must surely have produced such a superfluity of tongues and races. It is not for me, however, to attempt to divine such cause. I will merely endeavour, by recounting the experience I have had of the people of the district, to place material in the hands of those who, from their knowledge of the science, are better able to undertake the task, and bring it to a satisfactory issue. I have mentioned that North Cachar contains about 30,000 souls, and is divided amongst six different tribes. These tribes I will reduce to four distinct *nations*, which, for the most part, are subdivided and sub-subdivided into numerous clans and families, which remain apart from one another.

My four divisions are 1st, Cachárees; 2nd, Meekirs; 3rd, Nagas; 4th, Kookies.

1st, Cachárees. This nation is divided into two distinct clans, viz. the Hazai or plain Cacháree and the Purbuttia or hill Cacháree. The former of these, numbering in N. Cachar about 2,500 souls, forms the dominant class of the district, having formerly given Rájáhs to the whole of the country, having still a royal family of that line extant, being of the same clan as the late Toolarám, and being, by superior intelligence and education, raised above the other inhabitants. The Hazai Cachárees would appear to have been formerly possessed of the plains and kingdom of Cachar Proper; but they have gradually been driven northward. Many are still to be found in Cachar Proper, residing at the foot of the hills, and cultivating small patches of plain ground among the Teelahs; but by far the greater portion of them occupy the habitable portions of Toolarám's country and the lowlands on the river Dyung and Jamunah. They have a language of their own, quite distinct from Assamese or Bengali, and differing from that of the hill Cachárees. In religion they are Hindus, evidently not primitive but proselyte ones, their superstitions and customs tending to anything but what would be considered orthodox by a bráhman of Benares. They eat pigs and fowls freely, sacrificing them also to their deities, and are likewise much given to opium and spirituous liquors. They have no distinction of castes among themselves, and may eat all together. There is, however, a distinctive hereditary title among them which meets with great consideration. I am at a loss to determine whether this be a religious or a civil distinction. The title, being that of "Burmon" affixed to the name, would lead one to infer that they derived it from their adopted religion, and that those so titled were nothing less than Cacháree bráhmans. But again no caste exists, and the Burmons are undoubtedly the aristocracy of the Cachárees.

The Hazai Cachárees, living in the lowlands are the only people in the district who cultivate with the plough, and pay a land-tax. They are a hardy, quiet and industrious people, and cultivate rice and cotton, finding a market for the latter down the river Dyung. While engaged in the primitive occupation of agriculture, they appear to be worthy

and honest. Not so, however, when under the light of a little education, having learned to read and write, they merge more into the world, and become acquainted with the practice of our courts. Such knowledge appears to develope the worst portions of their character, and they emulate the Bengali in chicanery and rival him in intrigue. Persevering and industrious, they work themselves up into places of consequence under us, in connexion with these hills, and use their influence for the furtherance of anything but good. Corrupt practices and oppression are much spoken of with regard to their administration, and all the mischief that has been done in the country may, in a measure, be attributed to the under-current of power possessed and exercised by them. The presence of a European officer is a great check upon them, and most necessary, as from among them are composed the chief omlah and police officials of the district.

In dress and ornaments neither the hill Cacháree nor the Hazai have much to distinguish them from the Assamese or Bengalis, except in remote parts, where the coarseness and scantiness of apparel and the rudeness of the ornaments are conspicuous. Their cloth is for the most part home made, and is strong and coarse. The Hazai also manufacture a coarse kind of silk from the Eria-worm, which the higher classes wear.

The Purbuttia or hill Cacháree seems to be the same individual as the Hazai, but ruder and more unsophisticated. His residence among remote hills and forests must necessarily infuse habits and peculiarities into his nature, which will make him differ from his brother in the plains both morally and physically, and such is the case. The baneful effects of that "little learning" which is characterised as so dangerous, is not felt here. The Purbuttias have no means of being educated, and they live among their hills in pristine ignorance and simplicity, alike free from the advantages and disadvantages of the approaching civilization which has reached the Hazai. Unacquainted with the use of opium, drinking spirits, but in no immoderate degree, constantly employed in the hard labour of their cultivation, and breathing the fine bracing air of the hills, the Purbuttias are physically much superior to the Hazai Cachárees and are a stout, strong, hardy and courageous race, very industrious, though rather inclined to be quarrelsome and turbulent.

The Nagas and other neighboring tribes hold them in great respect, owing to trials of strength in former days, when the Cachárees revenged themselves on the Nagas and took fearful retribution for injury done. In no case moreover, except one, have the Angami Nagas, who make fearful ravages into North Cachar and deal wholesale slaughter among the Meekirs and Nagas of the country, attacked a Cacháree village. And it is odd to remark, that this village of Cachárees, Semkur, is generally considered as an out-caste community, and is more assimilated to the Naga, than the Cacháree, many of the customs of the Semkur Cachárees being the same as those of the Nagas, and unpractised by Cachárees in general. This difference is supposed to arise from certain privileges, enjoyed by the Semkur people, under their old rulers, in connexion with the salt wells in the neighbourhood of their village. Their revenue being paid in salt, and their time chiefly occupied in manufacturing it, a differeuce of pursuits left the Semkur Cachárees much to themselves, and enabled them to enjoy less community with the others; thus they became less influenced by the general voice of the people and by popular fashion, as to changes in manners and customs, and, I think, we see in the Semkur Cachárees of to-day what the whole clan must have been many years back, and the similarity of this one village to the Nagas in many respects leads us to believe that the whole clan of Cachárees must have come originally from the Naga stock. Indeed some people go as far as to say that the Purbuttia Cachárees were coerced by the old Rájáhs of Cachar, into their present state of civilization, having been formerly Nagas, and that they were forced to adopt "dhoties" and the Hindu religion. How far this may be true I have no warrant for saying.

In religion the hill Cachárees are Hindus, but even more unorthodox than the Hazai, and retaiuing many more superstitions of their old faith, many of their observances being similar to those of the Nagas. They have not any castes among them, neither have they the distiuctive title common to the Hazais. They look down upon their brethren of the plains, as weak and effeminate; and these latter do not fail to grind them when placed in power, and able to do so with impunity. Each family lives in a separate house, communities being formed into villages of between twenty and one hundred houses. The

young men of the village after they have attained a certain age, and before their marriage, no longer continue to live with their parents, but club together in a large house, placed generally in the centre of the village and called the "dekha chung" or warrior's house. This practice they have in common with the Nagas. The Purbuttias in N. Cachar number about 6,500 souls. They cultivate rice, cotton, sugar cane and tobacco, not with the plough, but by means of the hoe, and as theirs is a peculiar mode of cultivation, apparently common only to the hill tribes on their frontier, and practised by the Kookies and Nagas also, I will enter into a detailed account of it. I have already stated that the prevailing jungle in N. Cachar consists of a small single bamboo, which grows uniformly and closely together, the stems not being more than ten inches or a foot apart at their base, and reaching a height of thirty feet. This jungle extends all over the lower hills and the spurs from the high ones, and is only absent on the tops of the mountains and in some low grounds to the north. This wilderness of bamboo is the great cultivating ground of the district, and the process is thus managed. Early in the cold season large parties of the cultivators proceed to the jungles in the vicinity of their villages, and having selected a good patch, with as much soil on it as possible, commence cutting down the bamboos and clearing the space. The bamboos are cut off about two feet from the ground, the roots and stumps being allowed to remain in the soil: when sufficient space has been cleared, the cut-bamboos are left to rot and dry on the ground, and the effect of one or two showers, at intervals, coupled with the continued dryness of the cold season, renders them by the months of March and April almost as inflammable as gun-powder. Towards the end of the cold season, these fields of cut-bamboos, sometimes embracing the whole of a hill, at other times stretching along the whole face of ridges and valleys, are set on fire in various places. Nothing can exceed the fierceness of the conflagration, or the glorious effect produced by such large masses of flame, roaring and lapping the hills on all sides, and the enormous volumes of smoke that are emitted and hover like clouds in the air. The conflagration is over in a few hours, and leaves on the ground a coating of ashes about an inch or two in thickness, and this is the only manure

necessary to make these sterile hills yield fertile crops of almost any kind. By means of the hoe (a rude and uncouth instrument, consisting merely of a wooden handle about two feet in length, with a piece of iron attached to the end of it, something in the manner of an adze, only not on such a large scale) the soil lying below the ashes is turned up and mixed with them in the places between the stumps of the burned bamboos, which are still left to cumber the ground. Nor is the immunity enjoyed by these stumps, the effect of indolence or a desire to save labour at the expense of the crop on the part of the cultivators, but, on the contrary, an established custom, which experience has forced them to adopt, for these roots and stumps serve in a great measure to prevent the loose soil being washed away from the faces of the hills, and furthermore facilitate the re-growth of the jungle, when cultivation on the spot is abandoned. The soil being thus prepared, the seeds are dropped in, nor is care taken to allot to different vegetables, different spaces, but paddy, sugar-cane, tobacco and cotton are all found growing in the same beds. The harvest is reaped in September or October, sometimes even as late as November and December, and the ground may be again made to yield for another year or two, according to the custom of the cultivators or the richness of the soil. The Purbuttia Cachárees plant the same ground for two years at a time. When the land is considered exhausted, jungle is allowed to re-cover it, the bamboo again springs up in its old locality, and in the course of between seven and ten years, the soil is once more fit to be brought under cultivation. This is the only kind of culture practised in N. Cachar, and is common to all the tribes with very trifling variations. The Meekirs and old Kookies, as well as some of the new Kookies, cut down the forest in the low lands as well as bamboo jungle, and put it through the same process, cultivating on the same spot for four or five years, but forest-cutting is more laborious than bamboo-cutting, and the trees take thirty or forty years to grow up again when the ground is abandoned.

2nd, Meekirs.—Of this tribe the tradition is as follows. They were originally settled in Toolarám's country, under chiefs of their own. Being conquered by the Rájáh of Cachar, they fled to Jynteah for protection, and meeting with great oppression from that state,

they emigrated to their present localities in Assam and N. Cachar, and placed themselves under the Rájáhs of Assam, who appointed a chief over the whole clan, granted them lands and exacted revenue. This tribe is, I believe, subdivided much in the same way as the Cachárees, and has two distinct sections, namely, the Hill Meekirs and the Plain Meekirs. The latter reside chiefly out of North Cachar, in the district of Nowgong, on some low lands which go by the name of Meekir Par. These people, though industrious and hard-working, never rise to office like the Hazai, and seem to be devoid of all ambition. The Hill Meekirs are to the Plain Meekirs, much as the Purbuttia is to the Hazai Cacháree. Although placed in exactly similar circumstances to the Hill Cacháree, they display none of his courage, and seem wholly wanting in martial spirit. In consequence of this, they are made the constant prey of the marauding Kutcha and Angami Nagas, who attack their villages, kill, spoil and carry into captivity, no resistance being offered. It is said, that long ago an attempt having been made by the Meekirs to throw off the yoke of Assam, and failing, they were made to foreswear the use of arms, which may be the cause of the cowardice of the present generation, who, although they do carry spear and dhao, never make use of them save for the purposes of cultivation and wood-cutting.

The Meekirs are in many respects very like the Cossiahs, which fact may arise from their having for some time sojourned in Jynteah, and perhaps received some admixture of Cossiah blood. They wear the same kind of dress, which is peculiar and not worn by any of the other tribes in N. Cachar. This consists of two pieces of cotton cloth, about eight feet by one and a half each, dyed with red stripes, and fringed at both ends, sewn together like a bag, apertures being left for the head and arms. and put on in the manner of a shirt.

A striking resemblance also exists in the cast of countenance, and the growth of hair upon it being confined to the upper lip. But the Meekirs are physically a much inferior race to the Cossiahs, possessing neither such large frames nor such development of muscle.

Their locality in N. Cachar, is to the west and north in Toolarám's country.

The Meekirs though cowardly are laborious and persevering, and are considered the best subjects in N. Cachar, keeping clear of

courts, paying revenue regularly, and working hard at their vocation as cultivators. They rear rice and cotton in abundance, disposing of the latter to Cossiahs and to merchants who come up the Dyung.

When not employed in agriculture they fell large trees, construct canoes, and float them down to market in Assam, realizing considerable profit by this manufacture. The labour of their cultivation is greater than that of the other tribes, as bamboo jungle is scarce in their locality, and they are necessitated to clear forest land.

The Meekirs build their homes on high muchans or platforms, supported on posts, several feet from the ground. One timber laid slanting against the platform, with notches cut upon it, serves as a ladder to enter the house; this may be withdrawn at pleasure, as a guard against wild beasts. The houses are generally very large, several families at times living in the same tenement in order to avoid payment of the house-tax. The house, however many may be living in it, is not divided into rooms, but men, women and children of different families to the number of thirty or forty sleep altogether in the same apartment, in a state of almost entire nudity.

The Meekirs have no regular religion, many of them, especially those in Assam, have been converted to Hinduism, but they are allowed by their priests to retain most of their former superstitions and customs, and are only enjoined to discard the use of spirits, in lieu of which they take to the much more demoralizing vice of eating opium. The unconverted Meekirs delight in grog, and take it to excess, most of their ceremonies being celebrated by drunken orgies. But they are peaceful in their cups, and disturbances seldom or never occur. The Meekirs eat pigs and goats as well as fowls, and in fact all animals, but they refrain from killing the cow, more from prudential than religious motives. They worship the sun and moon, and large rocks and trees in the forest, which they consider the abiding places of unknown and invisible deities, to whom they offer boiled rice, fowls, goats, and pigs as sacrifices. There is no religious ceremony connected with marriage among this tribe. A bargain is made and a contract entered into, and man and woman are husband and wife. Polygamy is discountenanced though practised. A feast is always given in commemoration of a marriage, and likewise on the birth of a child.

Feasts before and after the funeral are the only obsequies, the bodies of the dead being burned, and their ashes buried.

The number of Meekirs in N. Cachar is difficult to be ascertained, as it cannot be correctly calculated from the number of houses. It is supposed to be, however, about 4000 souls.

3rd, Nagas.—There are about a dozen different tribes, each possessing some marked peculiarity and speaking distinct languages, to whom this common appellation is given. Indeed, the natives of the plains apply it promiscuously to all the hill tribes on the frontier, and as the word is their own, and unused among the hill people themselves, they have every right to do so; Naga, it would appear, being a corruption of "Nunga," naked, and very properly applied to those who go about with such scant clothing. Some say, however, that it is derived from the Sanskrit word "nag," a snake, having reference to the subtle and treacherous character of the people. In N. Cachar, there is, however, only one tribe, who call themselves Aroong Nagas. These number throughout the district about 7500 souls, and build their villages, which consist generally of from between twenty to one hundred houses, on the tops of hills and on the crests of ridges running out from the Burrail on much higher levels than those occupied by any of the other inhabitants of the country. They seem also more attached to the sites of their habitations than the rest of the tribes in those parts. Cacháries and Meekirs flit to other locations on slight pretexts; the fear of an attack, or a quarrel with a neighbouring village will make them change their sites; and on the exhaustion of all the soil in their immediate vicinity, it is their custom to remove nearer to the new jungles which it is their intention to clear: the Kookie also is a migratory animal, and never remains more than three or four years at the same place. But nothing short of the direst necessity will force the Nagas of these hills to relinquish their native spot of ground. Sometimes indeed they are obliged to do so, when placed in exposed situations, and constantly subject to attacks from parties at enmity with them, whom they cannot resist; at the present moment I know of a village site, in the neighbourhood of the Angami frontier which has been abandoned owing to the repeated attacks which had been made on the villagers while there resident. The Nagas who occupied

that site have come into the more central parts of the district, and have allied themselves with other friendly villages; but on greater security being afforded them, they would to a man return and rebuild their old village. When the soil near their homes is exhausted, they proceed to great distances to cultivate, little heeding the labour of conveying back their harvests; and for a people who appear so lazy and idle as the Nagas (the casual visitor generally finding them sitting lolling at their doors, drinking grog) it is really wonderful to see the sacrifices they make to this love of certain localities. Their villages being placed on heights in most cases, water is not to be had any where near, yet they do not murmur at having to convey it on their backs from the very bottoms of the adjacent valleys, five or six hundred feet in perpendicular ascent, and perhaps as much as a mile in distance. At such villages, strings of women, laden with the necessary element contained in long bamboo choongas, are seen making the weary journey morning and evening. From this attachment to particular sites and to the country in general, I think it may be inferred that the Nagas are the earliest inhabitants of the soil. I leave it to others to find out where they came from. But if the question be to draw a line of distinction, between the aborigines of India, and those tribes who have emigrated into it from the east, I would draw that line here, and place the Nagas, although they may have some marks of a Tartar origin about them, as the rudest of the aborigines of Hindustan—whereas the Cossiahs, Meekirs, Kookies, Monipuries and Looshais, and many others are directly connected with the far east. The three latter, having approached their present localities from the south, may possibly have been crossed with the Malay: for the Cossiahs and Meekirs, who were undoubtedly earlier immigrants than either of these three, retain the peculiarities of the Tartar countenance far more distinctly than they do.

The Nagas have no kind of internal government: they acknowledge no king among themselves, and deride the idea of such a personage among others. When questioned, they proudly plant their spears in the ground, and pointing at them, declare they have no other Rájáh. They appoint as spokesman of the village some elder who has the reputation of superior wisdom, or perhaps more

frequently the influence of wealth, and his position as spokesman or "Gáon Búra" gives him a certain degree of authority; but this is very moderate indeed, and may at any time be resisted and defied with impunity, the tribe utterly abjuring the idea of subjection to any one from among themselves. The place of Gáon Búra is not hereditary, nor, in every case, is it held for life. Petty disputes and disagreements about property, are settled by a council of elders, the litigants voluntarily submitting to their arbitration. But correctly speaking, there is not the shadow of a constituted authority in the Naga community, and, wonderful as it may seem, this want of government does not lead to any marked degree of anarchy and confusion; on the contrary, in his village, the Naga is peaceful and hospitable, good-natured and honest; for months that I have lived with him, I never heard him use an angry word or inflict a blow, however slight, on any one. Such a state of things must most assuredly arise from some peculiar cause, which cannot elsewhere be adopted, otherwise what an advantage it would be to us to throw off the whole of that ponderous and expensive system which is concentred in Westminster, and branches forth to every colony, country and village throughout our possessions, and, taking a lesson from the Nagas, learn to live peaceably and honestly without law. But our civilization and christianity deprives us of the mainspring which acts so apparently well on the savage of the hills, and God forbid, that it should not. The Naga's religion, the Naga's principle and sense of honor, is comprised in one word, and that word is revenge—deep deadly revenge, and the prosecution of it to the extremest lengths, for the most trifling offences. This feeling is not confined to individuals, but taken up between communities, and often by parties in one and the same community. Is there a quarrel between two Nagas of different villages, the dispute inevitably causes bloodshed, and a feud is established between the villages of the two disputants, which nothing will assuage, and which, in time as advantage offers, will find issue in some dreadful massacre. The Nagas are exceedingly treacherous in enmity, and brook no insult. An insult given, it is a point of honor to have blood—and blood shed by the one party calls for a like stream on the part of the other.

When any difference occurs between two men of the same village, which is rarely the case, each individual has his party who cling to him and take up his quarrel, not by any means from a sense of justice, but from relationship—and a civil war ensues which it is disgusting to contemplate. It is not to be wondered at, then, with such evils before them, evils which are brought home to every member of the society, that the Nagas are so careful to curb their passions on small matters, and to avoid entrance into a quarrel, when, being in, they carry it out to such exterminating lengths: and therefore, anomalous as it may seem, the most baneful passion that arises in the heart of man carried to extremity is the cause, in this instance, of the existence of a society without laws and constituted authority living in general peace and honesty. I do not think this state of things is without precedent, even in the history of our own country. If we take into consideration the state of the Highlands of Scotland some one hundred and fifty years ago, I think, we shall find many points in which great similarity exists. There, though subjected to chieftains, the clans were left with very little more law, than that which each man carried at his side in the shape of a broad sword. There again the spirit of revenge was paramount in every breast. The fiery Celt could brook no insult, and feuds between clans espousing the cause of individuals were frequent and bloody. Yet no circumstance of internal anarchy marked those lawless days. Society was not outraged, and the different communities were among themselves peaceful, hospitable and neighbourly, rigidly avoiding all cause of quarrel, being sufficiently urged to curb their temper, by dread of the consequences which would ensue, from no other agent, but unmitigated revenge.

Notwithstanding the staidness in the Naga character, arising from the circumstances mentioned, they do, at certain seasons, find vent for the indulgence of private grudges that they owe to individuals among themselves, in a way at once harmless and ludicrous. At certain stated times, once or twice in the course of a year, all the village adjourns to some convenient spot, and a general melée takes place, every one fighting for his own band, but using no weapons save those with which nature has provided him. These conflicts are very fierce, and the bruises and scratches given and received

most severe; yet they are not taken into account and never give ground for a quarrel, whereas at other times the lifting of a hand would lead to a blood-feud.

Since the regular establishment of our government in these hills, many feuds have been patched up among the Nagas, and their recurrence is less frequent; the presence of an European officer on the spot, who can expostulate with, and explain our policy to, the most influential people of the tribes, has also materially tended to check the effusion of blood. But still they do occur, now and then, and nothing will eradicate the evil spirit, until many years have passed away, and a brighter light shines among the rude inhabitants of N. Cachar.

The Nagas have a very vague idea of religion. They admit a plurality of deities having different attributes, but have none to whom they ascribe creation, the universe being pre-existent to their gods, and remaining unaccounted for. The first person in their mythology is "Semeo" the god of riches, to whom all those who seek wealth make sacrifices. He is also supposed to inflict punishment in the way of sudden reverses of fortune and sickness, on those who, having wealth, do not sacrifice to him. "Kuchimpai" is the god of the harvest, as well as one possessing general influence over the affairs of mortals. To him sacrifices are made of goats, fowls and eggs (the large animals such as buffaloes, methins and cows, being reserved for Semeo) and prayers offered up for the prosperity of the crop. Among the malignant deities "Rupiába" has the first place; to his displeasure are ascribed all the misfortunes that fall to the lot of mortals, and offerings of dogs and pigs are made to appease him when angry. He is supposed to be of a very fierce and ungainly appearance, and has only one eye, and that in the middle of his forehead. As an assistant Rupiába has got a blind god of the name of "Kangniba," whose temper is fierce. He is worshipped at cross roads, where propitiatory offerings are piled up for his benefit by passers-by. The fact of his being blind is wickedly taken advantage of by the Nagas, and offerings made to him seldom consist of more than a few common leaves, he being supposed to be unable to distinguish between them and articles of greater value. When fowls are sacrificed to this god, a very *small* fowl indeed is

selected, and placed in a *large* basket at the appropriate place. The blind god *feeling* the size of the basket, takes it for granted that the contents are commensurately bulky, and deals his favours accordingly! Indeed, Naga worship is none of the most sincere, even as regards the animals that are sacrificed to the wide-awake deities; little more than the entrails and offal is apportioned to the god, the remainder going down the ungodly throats of the petitioners!

Omens are commonly consulted, and are supposed to indicate the particular deity that is to be worshipped in order to attain a desired end or avert evil. This being ascertained, the village is strictly closed for two days, the inhabitants abstaining from all labor, and neither going out themselves nor permitting any one to enter during that period. This custom is strictly kept, and called "Genna;" it is difficult to find out what is done during this interval of seclusion; but nothing further, I am inclined to think, than sacrificing, eating and drinking. Before burning newly felled patches of jungle for cultivation, it is the invariable custom to establish a Genna. On this occasion all the fires in the village are extinguished, and a cow or buffaloe being slain, they roast it with fire freshly kindled by means of rubbing together two dry pieces of wood, make sacrifice and eat, after which they proceed in procession with torches lit from the fresh fire to ignite the felled jungle.

The Nagas cultivate rice, cotton, and tobacco as well as the more common Indian vegetables, such as yams, byguns, kuddoos, cucumbers, Indian-corn, &c. Their mode of cultivation is exactly similar to that described with reference to the Purbuttia Cachâries; but they take more crops off the ground than any of the other tribes who cut bamboo-jungle, owing to their distaste to remove to other sites, when the ground near at hand is exhausted. Perhaps it is on account of this, the soil being overtaxed, that both the rice and the cotton grown by the Nagas is inferior to those produced by the Kookies and Meekirs.

The Naga houses are built after a peculiar fashion, having the eaves down to the very ground. One gable end, the front entrance, is considerably elevated, while that to the rear slants down almost to the earth. The floors are not raised on platforms. The houses contain two rooms, the inner reserved as a sleeping apartment, while the outer serves for

the domestic business and the residence of the pigs and fowls belonging to the family. The village is generally built in one irregular street, the entrance with gables facing the road, but sometimes the houses are thrown together without reference to order at all. Each family lives in a separate house; and the young men or "Dekhas" inhabit a large hut appropriated to themselves, in which are hung up the spoils of the chase and the implements of war, and which forms at the same time the caravansarai or inn of the village.

The Nagas attach great value to iron, and use it only in the manufacture of weapons, their cooking utensils being invariably made of wood, bamboo or clay. They manufacture dhaos, spears, hatchets and hoes, there being generally in each village an individual who officiates as blacksmith.

Two or three kinds of cloth are manufactured by the Nagas, among which are the coarse khés which they use as a covering, and a small piece of cloth of different texture, dyed with indigo, which they tie round their waists. The cloth used in dancing is the same as the white khés, but has small triangles at regular intervals woven into it with red and blue thread, and also fringes at each end made of the same, which give it a gay appearance.

This tribe is passionately fond of ornaments, and both males and females may be said to load themselves with them; many of these are manufactured at home, but they consist for the most part of nothing but brass-wire, an article much prized by the Nagas, and shells, or cowries, which are imported. One of their ornaments, an armlet, is peculiar to themselves, although it has been adopted by the Kookies since their arrival in the country. It consists of a rod of brass, twisted some eight or ten times in the shape of a wire-spring, and slipped on the arm, fitting tightly to the flesh between the shoulder and the elbow, and being most inconvenient, I should say, for the exercise of the arm. There is only one stone to which the Nagas attach any value. I have never been able to find out its name; it is a dirty, yellowish, almost greenish looking opaque stone, and is cut by them into cylindrical beads, and worn, stringed together, round the neck. Few among them are rich enough to have a complete necklace of such beads, but most of them will be seen to have as many as five or six of this kind strung on in company with others,

and some may have half a necklace of the precious stone. In dancing, both men and women wear heaps of ornaments chiefly composed of shells. With the exception of a little cloth, tied round the waist, the end of which hangs over in front and covers the private parts, the Nagas go quite naked, nor do they feel any shame at the exposure of members which civilization requires to be concealed. The women, wear a wrapper over their thighs which extends from below the navel to the knee. Married women leave their bosoms uncovered, but virgins have another cloth tightly tied round their breasts. Both sexes protect themselves from the cold by a loose cloth thrown over their bodies like a blanket. Neither the men nor women wear any sort of head dress. The women who are married wear long hair plaited, and knotted at the back, or sometimes flowing naturally over the shoulders. The unmarried women have their hair cut off their face in a square fashion, and brushed down upon the forehead, nearly to the eyebrows. The men cut their hair short (shaving a little at the forehead and sides) and train it to stand erect. As a general rule there is not the slightest appearance of hair, either on cheek, chin or upper lip, and a good long beard is always an object of curiosity to the Nagas, when met with in others. The Nagas, both men and women, bore their ears but not their noses, their earrings chiefly consist of brass-wire rings. But they are very fond of flowers and often place them in their ears, so also will they place any coloured piece of paper or cloth, and the blue beetle wing or even a blade or two of green grass or leaves.

Marriage among them is a simple contract entered into between the man and woman or their families; the family of the bride being presented with cows, pigs, fowls or drink according to the means of the other party. There is no ceremony performed except the giving of a grand feast to the whole village, who in return build a house for the newly married couple. In some cases a long betrothal precedes the marriage, but no positive necessity exists for this custom, and it can always be dispensed with. The Nagas are not permitted to marry, until they have attained a certain age, and are able to set up house on their own account.

In his choice of a helpmate neither the beauty of form nor face is much taken into consideration by the bridegroom, physical strength

and industry being the great desiderata in a wife, the former giving promise of numerous offspring, and both being indispensable to one who is, unassisted, to perform all the menial duties of a household, as well as give assistance in the field. The Naga woman is quite a model of labour and industry. At all hours of the day she may be seen busily employed in domestic duties, weaving cloth, pounding rice, washing clothes, carrying water, making grog, or tending children, while her husband and the men generally lie idly basking in the sun, deeming it effeminate to put their hands to any work save the cultivation of their fields, or the repairing of their houses.

The Nagas bury their dead at the very doors of their houses, in a coffin formed of the hollow trunk of a tree: after filling in the earth, a large stone is rolled over the top of the grave to mark the spot, and the streets of most Naga villages are consequently choke full of these rough unhewn tombstones, marking the resting-places of their forefathers. Perhaps the idea of living thus in the neighbourhood of their ancestors may be one cause of their attachment to the sites of their villages. They display great affection in tending the graves of the recently departed; the spot is at first invariably fenced in, and flowers are often scattered over it, and the survivors love to sit upon the stone that covers those once so dear to them. When a warrior dies, his spear and dhao are buried with him, and it is the custom to bury with every one any article to which he or she may have been particularly attached during life. I have never heard of avarice invading the sanctity of the tomb in consequence of this custom, although dhaos and spears are greatly prized by the tribe.

The Nagas are extremely fond of dancing, more so than any of the other tribes, whom also they excel in the exercise. Men and women dance both together and separately. The men have a war-dance with spears and hatchets, in which all the circumstances of battle are acted, the advance, the retreat, the wielding of weapons, and defence with the shield, accompanied by terrific howls and war whoops, which has, when well enacted, a very imposing effect. The dance in which the men and women unite, seems to be purposeless and monotonous, displaying neither grace nor agility, and so are some of the dances danced by the women alone, one of

these is, however, a very lively one, and resembles in some degree the Highland Fling. It is easily seen that the women are the chief dancers, and those who take most interest in the exercise. A very poor idea of music exists among the Nagas, and it is never practised except in dancing, where it serves to mark the time; a rude monotonous song is chaunted by the whole company, and eked out with the clapping of hands both on the part of the dancers and the spectators. The performers, being laden with massive necklaces, armlets and bracelets, make these ornaments chink in time to the step, and a drum is also in some instances beaten in accompaniment.

The Naga cry or war-whoop is not a sound to be described in words, being something fearfully shrill and long continued, yelled with variations. But the custom among them called "hoo-hoo-ing" is easier of description; this is a common way among this tribe of paying honour to any individual, or to the inhabitants of any other village that they may happen to visit, and it is always supposed to call forth a donation from the party honoured. Parties of from ten to fifty take up the cry in chorus, which consists of nothing but the sounds of "hoi and hou" uttered alternately with the full force of the lungs, for about an hundred times, and finished off with a "howh" a harsher prolongation of the "hou." When one village compliments another in this way, they are very careful to exact a certain value for the compliment paid, and quarrels have been known to arise, when the compensation was not thought sufficient.

The Cachárees of Sunkur, alone, of all the other tribes in the country, have this custom in common with the Nagas.

In carrying burdens the Nagas in respiring utter a sound like "hu ho," and when a number are on the road together a chorus is maintained. This custom is practised by all the tribes with slight variations, but it must not be confounded with the "hoo-hoo-ing" described above, which is strictly peculiar to the Nagas. For an inhabitant of the hills the Naga is very cleanly in body, washing himself pretty freely whenever he can come across a sufficiency of water. But his clothes, except when new, are very filthy, and filled with vermin. As regards eating, he is the most indiscriminate animal in creation. His staple food is of coarse rice, but his luxury consists in flesh. I do not know a single living creature of any kind which he will not eat,

and that too whether it dies a natural or a legitimate death, and however far the body may have advanced towards decomposition. Insects, reptiles, carrion animals, as well as those in general use for food are eagerly sought after by him. He eats frogs, lizards, snakes, rats, dogs, monkeys, cats, &c. with relish, and will pick them up for that purpose though found dead and half rotten in the jungles. It is not to be wondered at, that there are no jackals or vultures to be found in the hills of North Cachar; what would they do if subjected to such competition?

The Nagas make a fermented liquor from pounded rice, which they drink in great quantities, especially in the morning, when it serves them as breakfast, being of tolerable consistency. It is not very intoxicating, and has an acrid disagreeable taste. The Nagas smoke very little, and when they do, it is more for the purpose of obtaining the tobacco oil in the bottoms of their pipes, than from the enjoyment of the vapour. This oil they mix with water and drink it, and they also drink water in which the tobacco leaf has been pressed. Tobacco is also chewed by them in great quantities.

4th, Kookies.—These, in North Cachar, are divided into two distinct sects, which sects are again divided into a number of clans; all these clans, though coming from the same stock and speaking dialects of the same language, are still entirely separated in interests, having frequently in bygone times waged war with one another, and having manners and customs widely different from each other. The sects are distinguished from one another by being termed old and new, there being no distinctive appellation among themselves except for the clans.

The old Kookies, with a population of not more than 3,500 individuals, are divided into three clans, called Rhángkól, Khélma, and Beteh, of which the most considerable is Rhángkól. These clans speak dialects differing very much from each other, and the whole differ so much from those spoken by the various tribes of new Kookies, that in most cases individuals of the two sects cannot make themselves understood by each other at all. On one occasion of some necessity I remarked a very intelligent new Kookie, endeavouring to explain himself to one of the Khélma clan, and failing entirely to do so by the simple power of words, being

obliged to eke out his communication by signs, by means of which his purpose might have been equally well made known, had he been an Englishman. Not only do the clans and, more widely, the sects differ in dialect, but their manners and customs, government and ceremonies, and with respect to the sects their religion also, is not the same. I can divine no cause for such a state of things; and the matter becomes still more inexplicable when it is known that these are not *all* the tribes of Kookies extant. The Looshais, a large tribe inhabiting the jungles south of Cachar, by whom the clans of new Kookies were driven northward, are themselves, undoubtedly, of the same family, and speak a language quite intelligible to the new Kookies. The Manipoories, a nation of proselyte Hindus, governing an immense tract of mountainous country to the east of Cachar, and inhabiting a large basin of plain ground among the hills, called the valley of Manipoor, can be traced by their own written history to a Kookie origin; and were this proof wanting it would be easy to supply one by pointing to the similarity of the Manipoorie and Kookie languages, or rather dialects, any new Kookie being able to understand Manipoorie without much difficulty, and indeed, the languages being almost identical.

The old Kookies emigrated from the jungles of Tipperah, the hilly country south of Cachar, some fifty or sixty years ago. Their first appearance in Cachar, in a state of almost perfect nudity, appears to have shocked the inhabitants very much, and they were compelled by the rulers to adopt clothing, which they did, and do to the present day. Some years after their arrival they were made available by the Rájáh of Cachár in prosecuting his wars with Toolarám, in which they distinguished themselves considerably, and gained a name for martial courage, which together with their good-natured dispositions, has established a general respect for them in the minds of their neighbours, the Nagas and Meekirs.

They are a hardy, stalwart and pains taking race, and together with the Meekirs are considered the best subjects in Northern Cachar, being peaceable, and regular in the payment of their rents. Their position in the district lies along the western boundary along the banks of the Copilee, where they cut down the timber forests, and raise crops of rice and cotton, disposing of the latter, which is of the best

quality grown in the country, to Cossiah traders who come among them to obtain it. The old Kookies are physically a more powerful people than any other in Cachar, and are second only to the Cossiah and Angami Nagas, of any tribes that I have seen, in weight and muscle. They are larger men than the new Kookies, both as to height and girth.

They make the best laborers or coolies, both for working and carrying, to be had in North Cachar, entering on their work more cheerfully, and performing more. In common with all other hill tribes they carry burdens in a large cylindrical basket, attached to the back by a strap of matted cane work which passes round the forehead, and is occasionally slipped down to the chest for change or relief. The regulation burden for coolies in North Cachar is twenty seers, the hire being two annas a day per man: but, when engaged in carrying on their own account, they do not hesitate to load themselves to the extent of a maund, and seem to be very little inconvenienced by the weight, even when travelling long journeys over the most irregular ground.

These remarks apply generally to all the tribes in the hills, who are all wonderfully long-winded, sure-footed, and strong-backed.

The old Kookies clothe themselves decently and affect a modesty unknown to the other rude tribes of these hills. They weave cloths of different kinds, all bearing great similarity to those manufactured by the new Kookies, especially a sort of cotton rug which they make as a covering in cold weather; this consists of uniformly sized lumps of raw cotton woven into a coarse-textured cloth, and knotted tightly between the woofs, forming an excellent soft and elastic mattress, as well as a good counterpane. They are also very skilful in mat and basket making, with bamboos, cane, and the bark of trees.

Like all other hill tribes the old Kookies are very fond of ornaments, and wear rings, bracelets, armlets, necklaces and earrings in great numbers. They have an extraordinary custom in common with two clans of the new Kookies, which being peculiar to these people is worthy of description: instead of merely boring the ear with a small hole, they cut a circular piece of flesh out of the lower lobe, and insert an elastic shaving of bamboo, rolled up in a ring, so as to form a powerful spring acting on all sides of the incision. By means of this spring, the hole is gradually enlarged,

until it is made to reach enormous dimensions, the outer flesh and skin of the lobe being sufficiently stretched out to admit of a brass or silver ring, four or five inches in circumference, being inserted within the hole. The ear is also turned round, so as to make the earring lie at right angles to the side of the head, and through the ear and ring are again attached other ornaments hanging down from it.

There is no regular system of government among the old Kookies, and they have no hereditary chiefs, as is the case with the new ones.

A head-man called the Ghalim is appointed by themselves over each village; but he is much more of a priest than a potentate, and his temporal power is much limited. Internal administration among them always takes a provisional form. When any party considers himself aggrieved, he makes an appeal to the elders, or the most powerful house-holders in the village, by inviting them to dinner, and plying them with victuals and wine. These personages having listened to the grievance form a council, and summon the defendant, who cannot resist their process, and attends. If found guilty he is fined according to the nature of his crime, one fourth of the sum being retained by the council as a personal remuneration, and the remainder being made over to the plaintiff as compensation. Of course this iniquitous system of redressing wrongs, would not stand good, if an appeal were made to our courts, but such is the attachment of the people to their own institutions that no such appeals are made. It is lucky that the establishment of our law, has left to this council little more than jurisdiction over domestic crimes and immoralities; thefts, assaults, and all the more heinous offences being tried before the magistrate. The council, however, is convened in cases of adultery, seduction, evil speaking, &c. and doubtless still makes good profits.

Very vague notions of religion indeed are prevalent among these people. All earthly evils are ascribed to the anger of gods, or the pleasure of demons, petitions being made and sacrifices offered up to both to propitiate them. They believe in a futurity of rewards and punishments in acknowledgment of the good or evil actions of this life, but cannot grasp the idea of eternity.

Marriage among them appears to be as much a religious as a civil ceremony, the Ghalim being the officiating priest. The young

couple place a foot each upon a large stone in the centre of the village, and the Ghalim sprinkles them with water, and pronounces an exhortation to general virtue and conjugal fidelity, together with a blessing, and the expression of hopes regarding numerous progeny. A grand feast concludes the ceremony. Notwithstanding the religious nature of the rite, however, a man cannot get his wife without paying for her, and the average price of a helpmate is Rs. 30, in kind, or coin paid into the hands of her parents.

Should the money or goods not be forthcoming, and the power of the little god very strong withal, the bride may still be won, the lover undertaking to enter into bondage in the house of her parents for a term not exceeding three years, after which the ceremony duly takes place. The business of courtship seems to be well understood and delicately managed among the old Kookies. As soon as a young man has made his attentions sufficiently marked, he sends a friend to the parents of the young lady of his choice, with a stoup of liquor to present to them: if the wine be quaffed the proposed alliance is accepted, and the lover summoned to enter into preliminaries. But if the offered cup be declined, the gentleman must go elsewhere in search of a bride.

Polygamy is interdicted and never practised.

Widows and widowers may marry a second time, after having remained in their bereaved state for a space of three years, and not then, unless with permission of the family of their late spouses. This permission is often withheld, and large bribes are frequently exacted before giving it.

The old Kookies burn their dead. The body is placed upon the pyre together with different kinds of eatables, and the whole is consumed, the ashes are then addressed by the friends of the deceased, and his good qualities recited. A feast with plenty of good liquor concludes the obsequies.

A married man is accompanied to the pyre by his widow, who has for the occasion donned her best clothes, and put on all her ornaments; she walks by the side of the bier with one hand on the person of her husband. When the body has been consumed, she bursts into loud lamentations, affectionately takes leave of the ashes, throws aside her ornaments and walks home with dishevelled hair.

In the Beteh clan on the day after cremation a pointed stick is stuck into the ground opposite the house of the dead man, and remains there until every one of the villagers has, in pursuit of his common avocations, passed by and spat upon it, after which it is removed.

A warrior in the Beteh clan is generally buried, and not burned; he is dressed in new clothes, and descends to the grave in company with his spear and hatchet, and a supply of eatables and grog, it being supposed that his enemies will not leave him alone, even in the world to come.

The original country of the new Kookies was the jungles to the south of Cachar Proper, and the ranges of hills lying between that province and Chittagong. Here they had lived time out of mind, waging war frequently among themselves, and being known as the terror of our Southern Frontier, having committed frequent depredations in our territories, evidently for no other purpose than that of securing human heads as trophies.

A war, however, sprang up between the whole of the clans, and another large tribe called the Looshais, who inhabited the same country though removed further south; this tribe having the advantage of propinquity to a coast-trade had supplied themselves plentifully with fire-arms and consequently the Kookies, who had heretofore considered themselves more powerful, were defeated, and in 1848-49 four large clans of them called the Thadon, Shingshón, Chúngsen and Lumgúm, together with other petty though distinct families, poured themselves into Cachar, flying before their enemies the Looshais, who had driven them from their native hills into the plains. The Looshais having followed up the pursuit into our territories and ravaged some villages on our grounds, it was determined that an expedition should be made against them on the part of our Government. Col. Lister with three hundred men of the Sylhet Light Infantry Battalion, accompanied by a rabble of the Thadon and Shingsón clans, penetrated some seven days' march into their country in the cold weather of 1849-50, and succeeded in setting fire to a large village consisting of a thousand houses. The village was taken by surprise, and the warriors all escaped, most of them being absent at the time, but nothing could prevent our wild

allies glutting their revenge on those that were at home. Colonel Lister, finding the enemy in greater numbers than he expected, and the country most intricate, and one in which an enemy conversant with it might give great annoyance by laying ambuscades and making sudden attacks, resolved to prosecute the expedition no further, and returned forthwith to Cachar; not, however, without meeting some slight opposition from the Looshais, who in more than one place had commenced stockading positions on the line of march, so as to obstruct the passage of our troops. Nothing further was done with reference to the Looshais, they having declared that they had no intention to molest us, their quarrel being with the Kookie clans alone.

It remained then only to settle the Kookies, whom the force of circumstances, and the chances of war had driven to our territory for protection.

This appeared no difficult matter to do; most of them had already settled on the woody hillocks near the river Goghra, and on the hills to the north, while many had penetrated into North Cachar and Manipur. But there still remained a large number of the clans of Thadon and Shingshón, those most recently expelled by the Looshais, who hankered for revenge, and were unsettled and turbulent. These, if left alone not being in themselves strong enough to continue openly at war with the Looshais, would have occupied themselves in making secret excursions with a few men at a time, and cutting off strong parties of the enemy when at work in their fields or wood-cutting, who in their turn would have retaliated, thus plunging the whole of the frontier into an endless little war of the most pitiless kind.

To prevent this, at Colonel Lister's suggestion, a levy of two hundred men was organized, consisting chiefly of Thadons and Shingshóns, officered by their own Rájahs and Muntries, to which, having been regularly trained, disciplined, and placed under an European officer, was allotted the defence of the southern frontier of Cachar. This measure succeeded admirably. The Kookies, who, under the firm belief that the corps was raised for the purpose of taking back their own country, flocked to the standard in numbers, were rather staggered at first by the severity of our discipline, recovered however,

when they began to appreciate the value of money, and perceive the regularity with which they received their pay; and all classes have ever since evinced great desire to become soldiers. The Kookie levy now not only furnishes frontier posts to the south, but has three large detachments in the northern hills, protecting the country from the Angami Nagas as well as the Looshais.

To return to the Kookies at present inhabiting North Cachar: it has been mentioned that on being driven from the Tipperah hills, many of them found their way to the north, some without even making an intermediate halt in Cachar. These consisted of portions of only three of the four large clans, the entire clan of Lhumgúms, settling either in Cachar, or going over to Manipur.

The fugitives appear to have been most hospitably entertained by the wild tribes into whose localities they thrust themselves, and settled down in unoccupied parts of the country, among the other villages of Nagas and Cacháries, and have ever since peaceably conducted their agricultural avocations, living in general on good terms with the rest of the people. Disturbances have occurred in which they bore a part, and it would be too much to expect their entire absence among a people so wild and warlike, coming for the first time into a settled country. One of the most serious of these occurred in 1850, of which the following are the circumstances: A hunting party of Kookies of the Changsén clan, returning from their sport, ignorantly attempted to enter a Naga village which was "Genna;" unaware of the Naga custom, and unable to understand the language addressed to them, although entrance was refused, they attempted to force it. An affray took place in which the Kookie Ráják was slain and the party forced to retire. The person of the Ráják being held almost sacred, his subjects were eager for revenge, and collecting a body of three hundred men, attacked the Naga village, killing several of the inhabitants together with the headman or Gaon Boora. Serious as this affair was, and though the Kookies were undoubtedly at fault, yet it must be considered that they were savages among whom a certain degree of hospitality is considered more a common civility than a virtue, and being unacquainted with the Nagas, owing to their recent arrival in the country, it is not wonderful that they resented what must have appeared to them

so churlish an act, as refusal of admittance to a party returning fatigued from the chase. Several of the Kookies were transported for this offence, and it has on the whole had a beneficial effect upon them, showing the power and determination of our Government to punish all outrages. Notwithstanding this and several other petty disturbances and quarrels, the new Kookies cannot be characterised as a turbulent race, but on the contrary as one well under control, and easily managed.

For three years after their settlement in N. Cachar, they were exempted from paying any revenue to the state, after which time, they were regularly assessed at an uniform rate of one rupee per house per annum. No European officer being present in the hills on their first arrival, the hills being left very much to the management of Cachárees, the new comers fell into the hands of this class and were subjected to a great deal of petty oppression and extortion and the influence that these men obtained over them, as ministers under us, and on other pretexts, has not yet been entirely done away with.

As subjects, the Kookies must always be looked upon, under existing circumstances, as a poorer class than any of their neighbours, for not only have they to pay the revenue exacted from them by us, which is indeed equitable and light, but they support among themselves a form of government which must be both expensive and oppressive. Each of the four clans is divided into separate and independent Rájáhlics, of greater or less power and numbers, consisting of one or more villages, each of which is presided over by a hereditary chief or Rájáh, whose power is supreme, and who has a civil list as long, in proportion to the means of his subjects, as that possessed by any other despot in the world. All these Rájáhs are supposed to have sprung from the same stock, which it is believed originally had connexion with the gods themselves, their persons are therefore, looked upon with the greatest respect and almost superstitious veneration, and their commands are in every case law. The revenue exacted by these chieftains is paid in kind and labour. In the former each able-bodied man pays annually a basket of rice containing about two maunds: out of each brood of pigs or fowls reared in the village, one of the young becomes the property of the Rájáh, and

he is further entitled to one quarter of every animal killed in the chase, and, in addition, to one of the tusks of each elephant so slain. In labour his entire population are bound to devote four days in each year, in a body, for the purpose of cultivating his private fields. On the first day they cut down the jungle, on the second the fuel being dry, they fire it, and prepare the ground, on the third they sow and harrow, and on the fourth cut and bring in the harvest. Besides the labour of these four days in which the entire effective population, men, women and children work for him, small parties are told off during the whole season to assist his own domestic slaves in tending the crop, repairing his house (which edifice is always built afresh by the subjects when a new site is repaired to) and in supplying wood and water for the family. On the occasion of the days of general labour, a great feast is given by the Rájáh to all his people, so also, on the occasion of an elephant being killed, to the successful hunters, but this is the only remuneration ever received by them, and calls can be made on them for further supplies and labour, whenever it may be required. It says a great deal for the loyalty of the Kookies, that they still submit to these exactious without grumbling, paying at the same time the full amount of their house-tax to our Government.

The Rájáh is the sole and supreme authority in the village or villages under him, no one else being competent to give orders or inflict punishments except through him. His power is of course anomalous, and illegal with respect to our laws and institutions, he being a mere subject of the British Government alike with the meanest of his village, and in no way placed in authority, except as mouzadar, or collector; but still that power exists in nearly full force, and no appeal is made against it by those subject to it. Revenue is exacted, and offences punished by fine and bondage, no murmuring voice, not even that of the culprit, being raised against the decree. I see no method of preventing this self-devotion to loyalty on the part of the Kookies. Violent measures would estrange them from us, and therefore, it is better to let the system die a natural death, which it most assuredly will in time, as the Kookies proceed in the acquisition of worldly knowledge.

To assist him in carrying on the affairs of government, the Rájáh

has a minister and more frequently several, called Thúshois or muntries who have the privilege of being exempt from labour and taxation at his hands. This office is not, strictly speaking, hereditary, although in most cases, except when thoroughly incompetent, the son succeeds the father, but is given to those qualified for it, as being men of property and influence as well as of ability and good spokesmen. The Rájáh himself is on the contrary invariably succeeded by his eldest son, for whom, should he be a minor, the kingdom is managed by a council of muntries. In default of sons, the Rájáh's brother succeeds, and failing him the nearest male relative takes the guddee, the salique law being in full force.

Should the Rájáh die without any heir to the throne, the chief muntri, if he be an influential man, takes his place, or some neighbouring Rájáh of the same clan is called upon to take the government or usurps it. Each of the clans have one great Rájáh, supposed to be the main branch of the original stock, to whom, although those immediately beyond his own villages owe him no allegiance, great respect is shown by all, and acknowledgment of the superior title given, although in power and wealth he may be much poorer than others of the tribe.

No regular courts are held among the Kookies, but complaints are always heard before the Rájáh assisted by his muntries whenever they may be made. Heinous crimes are very infrequent among these people. Theft is almost unknown, and they chiefly offend in slight quarrels and disputes among themselves, which are settled by their Rájáhs, a fine being exacted from the guilty party, according to his means and the extent of his guilt, either in wine, fowls, pigs, goats, cows, or methins. When cases of theft, burglary or arson occur, the criminal loses his independence and becomes a bondsman to the Rájáh for the term of his life. Cases of murder and manslaughter are of course taken up by our authorities and punished by our laws. But the punishment awarded for murder among the Kookies, was confiscation of all goods and property and perpetual bondage for the murderer, his wife and family, who thenceforth became slaves of the Rájáh and did his work. The only crime punishable by death among the Kookies was high treason, or an attempt at violence on the person of the king, and treacherous

commerce with an enemy of the clan: the victim in these cases was cut to pieces with dhaos, but of course no such extreme measures can be resorted to by them in the present day. In cases of adultery and seduction the punishment is left in the hands of the aggrieved husband or father. In the former case, death might be inflicted on the adulterer by any means with impunity, but more generally it was, and now invariably is, the custom to compound with him for a large sum of money, something over and above the original price of the wife, the adulteress then becomes the property of her lover.

In cases of seduction every effort is made, and in most cases successfully, to have the guilty couple married forthwith, a penal price being put upon the bride. All the women in the village, married or single, are perfectly at the pleasure of the Ráját, and no voice would be lifted against him for co-habiting with any of them, the only prevention being a sense of immorality, and an understanding among the royal families of the whole tribe generally that such conduct is infra dig: indeed there is little temptation, for the Ráját may have as many wives as he likes or can keep, both polygamy and concubinage being in common practice, female slaves living generally in the latter condition with respect to their masters.

The new Kookies have a much more defined notion of religion than any of the other tribes in Cachar. They recognize one all-powerful god, whom they call "Puthéu," as the author of the universe, and although they consider him to be actuated by human passions, yet they look upon him as a benevolent deity who has at heart the welfare and enjoyment of his creatures. He is the judge likewise of all mortals, and awards punishments to the wicked both in this world and the next, by inflicting death or disease. In all circumstances of affliction his name is called upon and sacrifices of animals are made to him, imploring the cessation of his own anger, or the avertion of the effects of that of other deities. Puthén has got a consort, a goddess of the name of "Nongjai" who has likewise power to inflict and remove diseases; her name is generally taken in conjunction with that of Puthén, and in cases of great urgency she is implored to influence Puthén in behalf of the petitioner. Puthén and Nongjai have a son called Thila, who acts under his

father, and has power to inflict diseases on those who displease him. He is considered a harsh and vindictive god, though not entirely malignant. His anger is averted by prayers and sacrifices made either directly to himself or to his father.

Thila has a termagant of a wife called "Ghumnoo," who is also possessed of power, and makes it felt in the shape of slight distempers such as headaches, toothaches, &c. She is described as being most jealous of her husband, and of her own position, resenting all omissions of her name in prayers offered up to her spouse. "Ghumoishe" is the deity or demon who exercises the most baneful effect upon mortals. Death is supposed to be induced by his apparition, and diseases of the worst description are caused by his anger, which is supposed to arise from natural bad temper, and cruel disposition and not to answer the ends of justice. By some he is said to be an illegitimate son of Puthén's, but others deny the relationship, and say, he has no connexion with the god whatever. The idea of making the origin of evil proceed, thus, from an illegitimate source is exceedingly clever. Ghumoishe is married to Khuchóm, a malignant goddess who has special power over diseases of the stomach, and these two are the terror of the Kookies; prayers are never offered to them, but sacrifices are made to appease their wrath, and Puthén is likewise called upon to avert it. Hilo is the daughter of this couple and the goddess of poisons, having power to make all eatables disagree with those who have offended her; she is also appeased by sacrifices or her influence is counteracted by prayers to Puthén.

"Khómungñoo" is the household god, whose sphere of action lies within the domestic circle. "Thingbulgna" the forest god, having jurisdiction in the jungles, besides whom there are river gods, and gods of the mountains and rocks. Each metal has a god who presides over it, and exercises power over everything having relation to it. Thus the god of silver is the god of wealth; and the god of iron is held in reverence by blacksmiths, and warriors, and is the god of battle. The gods of rivers, mountains and metals have no distinctive name beyond that of the matter over which they preside, and are merely called "Tui Puthén" or water god, "Thí Puthén" or iron god, &c., which makes me think that they may not be distinct personages, but merely the separate attributes af Puthén itself.

Death and diseases of every kiud are ascribed directly either to the anger of the gods, or the malignity of demons, and in every appearance of the latter it is believed that a deity is offended, who must be propitiated.

Some diseases in themselves indicate the power that has inflicted them, but these are few, and it becomes very perplexing among such an extended theocracy to fiud out the angry god. For the purpose of fixing this identity and conducting all religious ceremonies, there is a class of priests called "Thémpoo" or "Mithoi" who are supposed to have undergone an initiatory educatiou, before admissiou into the order, which possesses them with much ocult knowledge, and obtains for them the privilege of holding commerce with the gods, and divining the cause of wrath and the means of propitiation. This order is held in more dread than veneration by the people generally, and much mischief is often ascribed to them, from the abuse of the influence they possess with supernatural agents. The office is not hereditary, but the ranks of the priesthood are recruited by novices from among the people, who may wish to acquire such dangerous knowledge, and the number is not limited.

Such however, is the superstitious fear of the Kookies that they exhibit the greatest disinclination to be initiated, and to prevent the order dyiug out altogether, the Rájáhs have at times thought it necessary to coerce some of their subjects into becoming Thémpoos. This feeling of dread is further illustrated by a prelimiuary form of prayer uttered by the novice in which he beseeches Puthén that if there should be anything wrong in what he is going to learn, the fault may be visited not on him, but on his teachers. What the mysteries of this education may be, it is impossible to say, the Thémpoos themselves being very jealous of their secret, but it is undoubted that they have among themselves a language, most probably an entirely artificial one, quite different from that spoken by the people and perfectly unintelligible to them, which must be the first thing taught to the novice, the rest he most probably picks up from their practice which is as follows:

An individual of a village, being stricken with disease, goes to or calls for the Thémpoo, who *feels his pulse*, and questions him as to the spot on which he first felt himself affected, and on other matters

regarding the nature of his recent occupations. Having meditated for a short time on the replies, he at length names the god who has been offended, and mentions the kind of sacrifice which will appease him, particularising the colour of the animal that is required.

If the victim be a fowl the Thémpoo proceeds a short distance out of the village in the direction of the place where his patient was first affected, and lighting a fire, cuts the throat of the animal, pouring the blood forth as an offering on the ground, and muttering at the same time some praises in the unknowu language. He then deliberately sits down, roasts and eats the fowl, throws the refuse into the jungle, and returns home! and this is the whole ceremony which is believed to be so efficacious. Should the sacrifice required be a pig, goat or dog, the Thémpoo invites some of his friends to assist him at the meal, and in the case of a cow, buffalo or methin he has a large dinner party at the expense of the invalid. In fact it is ruinous among the Kookies to fall sick, these spiritual doctors, making in the end quite as long bills as regularly graduated M. Ds. They have also a very knowing way of escaping the responsibility of the ultimate result of the sacrifices, and the possibility of the death of their patient. For instance, a poor man, [and most of the Kookies are poor,] calling in a Thémpoo, may be told that the only effectual and sure means of recovery is by the sacrifice of a grey methin. The miserable invalid expressing his thorough inability to make such a valuable offering, asks the Thémpoo to think again, and say if there are no other means. The Thempoo declares that "he is very sorry, there cannot be the slightest doubt but that the grey methin was the precise animal indicated to him, success *might* however follow the sacrifice of a black and white goat." Should the goat even be beyond the sick man's means, the Thémpoo may mention a spotted fowl as the next most likely thing: and this will accordingly be given. Should success fail to attend the sacrifice the doctor is quite irresponsible, and only demands fresh sacrifices, generally getting them of different animals and colours, every two or three days, until the invalid recovers or dies. This is the only treatment of disease practised by the Kookies, and they have no knowledge of any kind of medicine. Those who have been admitted into our hospitals seem highly to appreciate our mode of

cure, and I do not think it would take much trouble to wean them from their present system both of pathology and religion.

The Kookies believe in a future state, the term of which they do not however fix, although they do not fancy another state beyond it. They have no actual idea of the soul, but believe that the departed assume their old forms again, and inhabit a world of shades, which they always describe as lying to the north. Their religion is intolerant, that is, they admit no one but themselves into their heaven, maintaining that for professors of other religions there must be other heavens somewhere else. Their idea of supreme felicity is the congregation of all the good of the tribe after death in a happy land, where rice grows almost without cultivation, and where the jungles abound in game. The ghost of every animal slain by a Kookie in the chase, or slaughtered at home for the purposes of hospitality, becomes in this state attached to him, and are his property, so likewise every enemy slain in the field by his own hands becomes his slave. The evil doers in this life form a separate community in the world of shades, and are made hewers of wood and drawers of water to the good. Peace is not a concomitant of this heaven, war and the chase being the leading occupation and amusement, which shows that this people cannot form a notion of happiness without the association of these fierce excitements, however, inconsistent their adoption may be, for in the next world, death is supposed to be unknown. This is an outline of their faith, but it has already begun to be shaken, and they themselves laugh at many parts of it.

They profess the greatest willingness to be taught the principles of the Christian religion, and openly say, "We will become Christians if you will teach us." Dr. Oliffe* spoke to several of them when he visited Cachar on the subject, and they professed a great wish to have a missionary sent among them.

Several isolated instances of conversion to Muhammadanism have already occurred among them, and all those who have been placed much in communication with Hindus, show a great tendency to adopt their customs, without even the inducement of invitation;

* Roman Catholic Bishop of Dacca.

indeed the Manipurees, who were but eighty or ninety years ago a tribe of Kookies, have thrown aside their old faith and embraced Hinduism; and therefore, there is every reason to believe that these superstitions are not deeply rooted in the minds of the tribe.

I feel confident that a zealous missionary with a good medicine chest, and some slight knowledge of the healing art, who would take the trouble to associate with the people, live among them, acquire their language and obtain a knowledge of the general character of the tribe, would in a short time make numbers of converts, and tend in a great measure to raise the remainder from the depths of ignorance and filth into which they are plunged.

The Kookies are naturally a migratory race, never occupying the same place for more than two or at the utmost three years at a time, but removing to new sites as soon as they have exhausted the land in the immediate vicinity of their villages which they appear to do in much less time than any of the other tribes.

The rice raised by the Kookies, and indeed the whole of their agricultural produce, is of a much superior quality to that of the Cachárees and Nagas, which may be owing to their not tasking the soil to the same extent, but abandoning it after the first or second crop. They are extensive growers of cotton of a very good quality, and carry on a large trade with merchants from Cachar, who come up to the hills to buy their crops, bartering the raw material for vessels and ornaments of iron and brass, and live poultry, the latter being considered equivalent to their weight in cotton, and the Bengáli bepáries frequently obtain some extra pounds by making the fowls swallow a few ounces of lead each before being weighed.

Migratory though the Kookies be, their villages have a much more permanent and finished appearance than those of their neighbours. They sometimes consist of as many as a thousand houses, but the difficulty of finding sufficient quantity of arable land, for the supply of such a large population in any one place, causes them to split into different communities and occupy sites considerably removed from each other, and thus in N. Cachar the largest villages do not exceed three hundred houses. When separated in this manner the Ráják generally takes up his abode with the largest party, the others being placed under Thúshois, or members of his

own family, and all continuing to pay revenue to, and working for the Rájáh as before. But this splitting of communities generally leads to a division of interests, and should the Thúshoi be a popular and ambitious man he sometimes succeeds in throwing off the authority of the Rájáh, and establishing a dynasty of his own. This has been done more than once since the arrival of the Kookies in Cachar; and in their own country when thus separated, villages at a distance from head-quarters were often annexed by other Rájáhs of the same clan; the greatest trouble is, therefore, taken to keep the whole together as much as possible.

When it is found that the land in the neighbourhood of a village is exhausted, early in the cold season a party headed generally by the Rájáh himself, proceeds in search of another spot possessing the necessary capabilities for the support of the population. This being discovered, a road is cleared from the old site to the new one, and temporary huts erected at every five or six miles along it. About the beginning of January the whole population commence conveying their own household property and that of the Rájáh together with provisions, towards their new place of abode; each march occupies about three or four days, the villagers returning two or three times a day to bring on fresh loads to the first halting-place, and thus continuing the journey. When they reach the new site, all the property being deposited in temporary huts, the first thing done is to build a house for the Rájáh. In this occupation all the men of the village are engaged, and it is a matter of no small labour, the palace being sometimes as large as 120 feet by 50, and composed with the exception of the posts, which are of timber, entirely of bamboos and bamboo-matting, the roof being thatched with bamboo leaves. This huge barn-like edifice is raised upon a platform some six or seven feet above the ground, and is divided longitudinally into three halls, the centre of which is left open, the two others being partitioned off into separate chambers for the occupation of the Rájáh's wives, concubines, slaves, &c.

While the men are occupied in this erection, the women are engaged in collecting material for building their own houses, and upon the completion of the Rájáh's abode, the private dwellings are commenced upon, each man building his own. Sick or helpless

members of the society have houses built for them by the community, and the villagers will also build a house for a popular or influential Thúshoi, but no one except the Ráják can claim their labour as a right.

The village is built without much attention to regularity, and generally takes the form of a rude street or square with several rows of houses on each side. The houses are all gable-ended, of equal height at both ends, constructed almost entirely with bamboos, and raised on platforms three or four feet above the ground: they are of various sizes, according to the wealth of the owner or the number of inmates. A house for five individuals is generally five "láms" by three, a lám being a man's length, and that and the cubit ("tong") are the only measurements used among the people. The houses often contain only one room, but are generally divided into two, and frequently into more; the number of apartments depends upon that of the wives and concubines possessed by the owner, it being thought indelicate to keep two wives in the same chamber. Upon completion of their own houses the inhabitants construct a strong stockade round the dwelling of the Ráják, enclosing generally within it the houses of one or two of the chief Thúshois.

The village is next fortified, all roads leading to it being barricaded, admittance lying through a wicket, and the ground in the neighbourhood being thickly planted with "pánjies." Guard houses are also built at the barricades where the young men watch and sleep at nights. These measures of defence are, however, less frequently resorted to now, there being no enemies to fear, even the Angami Nagas abstaining from hostilities with people so well able to defend themselves. The village completed, cultivation is commenced, and the jungles resound with the clash of dhaos. The Ráják apportions to each individual the land that he is to clear.

In their own country, the Kookies generally perched their villages on the tops of hills, not from any particular love for such elevation, but as offering greater advantages for defence. They also contrived by this means to have the villages under one Ráják so placed, however distant they might be, as to be within sight of one another, and thus enabled themselves to give notice of an attack by means of bonfires. But in N. Cachar they prefer building on the low

grouuds, these being closer to places where the best and largest patches of cultivation can be cleared, and nearer water, whilst danger no longer exists of attacks from without.

The Kookies are a short sturdy race of men with a goodly development of muscle. Their legs are, generally speaking, short in comparison to the length of their bodies, and their arms long. Their complexion differs little from that of the Bengali, aud comprises various shades, but the features are most markedly dissimilar; the face is nearly as broad as long, and is generally round or square, the cheek bones high, broad and prominent, eyes small and almond-shaped, and the nose short and flat with wide nostrils. The women appear more squat than the men even, but are strong and lusty, and quite as iudustrious and indefatigable as the Naga women; working hard all day either at home or in the fields, and accustomed to carry heavy loads. The men, like the Nagas, are inclined to be lazy, though not to such an extent as that tribe. They love to sit on high platforms raised for the purpose in their villages, and pass the day in conversation and smoking. Men, womeu, and children all smoke to the greatest excess. A Kookie is hardly ever seen without his pipe in his mouth; whether labouring or travelling it is his constant companion, and one of his few means of calculating time and distance is by the number of pipes he smokes. The men smoke a pipe, the bowl of which is either made of brass, rudely ornamented, or of the end of a small bamboo tube, a reed being let in near the knot, as a mouth-piece. The women imbibe the vapour through water; an earthern bowl is introduced into a bamboo tube filled with water, from which issues the mouth-piece, and this water when well saturated with the oil of the tobacco is drunk by the men with great relish. They also chew tobacco in great quantities.

Rice is their staple food but they are very fond of flesh of all kinds, especially that of tigers and elephants, which they imagine imparts strength; they also eat dogs and cats, aud nearly every animal in the jungle. But they are not quite so indiscriminate as the Nagas in their food,and do regard some living creatures as unclean, and avoid carrion, except when preseuted in the shape of a dead elephant, which they cannot resist. They manufacture several kinds of fermented liquors, from rice, and have a kind of rice which they grow for the especial pur-

pose; these drinks are, at least some of them, not without an agreeable flavour, and are but slightly intoxicating. They also distil a spirit from rice, which is strong enough to ignite. The Kookies are however far from being intemperate, and are seldom or never seen intoxicated. Without exception the Kookies are the most filthy people on the face of the globe. Neither their bodies nor their clothes are ever washed, and in consequence they are eaten up with skin diseases, and their persons and garments swarm with lice, these latter they pick from one another's heads in numbers, and eat with the greatest gusto. This uncleanliness subjects them not alone to cutaneous diseases, but to long and lasting visitations of epidemics which sweep a quarter of the population away at a time; and the slightest flesh wound on their bodies or limbs festers and becomes a serious sore. The women appear somewhat cleaner than the men, and much less grave and sedate in their manner. The men are generally silent and serious in their demeanour, patient and slow to anger, bearing oppression for a long time without murmuring, but when roused at length they are uncontrolable in their passion, and deliberate in their prosecution of revenge. Feuds are kept up for ages between the clans, and although they may not be actually at war during the whole time, many petty injuries are inflicted, and insults bandied.

Notwithstanding the prevailing custom of exacting large presents for daughters given in marriage, the great desire among the people is for male offspring, and when signs of parturition become apparent the women pray and chant hymns to Puthén to favour their object. The delivery is effected by means of professional matrons of the village who are entitled to some small fee for their trouble. Should the child be male, the mother sings a song of joy and thanksgiving, giving expression to hopes of long life and honorable action on the part of her progeny. Three days after the birth of a female child, and five after that of a male, a feast is given to the immediate friends of the family, of which the child itself partakes! The mother masticates a mouthful of rice until well salivated and then inserts it into the mouth of the infant, after the manner of birds feeding their young: and this mode of nourishment is ever after pursued, although the milk is not wholly discontinued for several months.

At between nine and fifteen months of age, the child can walk by itself and begins to speak. Both male and female children go stark naked, until they are five or six years of age. The first instruction that boys receive is to learn to throw stones with precision. Youngsters of eighteen and twenty months are pitted against each other at a few yards endeavouring with all their might to hit one another: as they grow older the relish for this amusement increases; particular stones—round and smooth—acquire value in their eyes, and these are lost and won among them according to their success as marksmen. From stones they take to throwing sticks in the manner of javelins, and then learn the use of the bow and arrow. Their games are all warlike. Parties of them under a leader take up a position on the play-ground, which they defend against the attacks of other bands, stones; sticks and headless arrows being used in this mimic warfare. Where tobacco is easily obtained Kookie children smoke almost as much as the men, both boys and girls commencing the practice at the early age of five or six years: nor does it appear to have any baneful effect upon them. At twelve or thirteen, the boy is compelled to put aside boyish things, and commences undertaking the labours of cultivation. He is also at this age no longer allowed to sleep in the house of his parents, but associates with the young men whose duty it is to guard the village. He is still, however, strictly under parental control, takes his meals at home, and assists his father in the field. Filial respect takes a curious form among the Kookies. The father's name is held sacred from utterance by the son, and in common intercourse is never used, the style of address both to him and of him to others being simply "my father" (Kapá). But when stung by insult, or rushing to the battle this rule is broken through, and a man will exclaim "How dare you say this to the son of so and so!" or in the latter case "Who dares to meet the son of &c." A Kookie boy of twelve is very different from most other children. He is sparely built, and has an unhealthy look; most probably some hereditary taint or cutaneous disease is even at this early age breaking out in sores and blotches on his face and limbs; but he is active beyond anything human. There is not a tree which he cannot climb, nor a position into which he will not throw himself. His endurance of fatigue is almost

miraculous. I have seen a boy of not more than ten years of age, carrying a burden weighing about 30lbs. for a long march of some fifteen or sixteen miles, on a foot-path rugged and difficult, over country where high mountains had to be ascended and descended, lifting his legs as lightly as a cat, never making a false step, and his skin being perfectly dry and free from perspiration. Nor was this done only for one day, but for ten, one after the other: and I believe any other Kookie boy could do the same.

At seventeen or between that and twenty the Kookie reaches his perfect physical state. He has now filled out, and looks strong and lusty. He has gained the strength of manhood without losing the agility of youth. He has learned the use of all the weapons of war, defensive and offensive, and is looked upon as a warrior and hunter as well as cultivator. It is about this age that he generally marries and sets up on his own account. But he has frequently, like Jacob of old to serve many years in bondage before he can claim his bride.

If his parents are rich, or he himself has thus early acquired wealth, this servitude is of course dispensed with, and suitable presents being made, he at once enters the married state. The circumstances attending the ceremony are as follows:—

The young man having fixed upon an object of his desire, sends a friend of his own to acquaint his chosen and her parents with the state of his heart. After the friend has accomplished two such visits, without any objection being offered, the young man's father makes a formal visit, and negotiates the marriage, the price of the wife being then determined on. This price depends upon the wealth of the contracting parties, and is seldom or never given in coin, but in cloths, ornaments and cattle. The poorest individual cannot get a wife without an expenditure of about thirty rupees, or personal bondage for two or three years. The preliminaries being settled, on the eve of the wedding-day the young men of the village congregate at the house of the bride's father, and feasting, dancing, music and athletic games are the order of the day and are carried on during the whole night. Next morning the young couple clothed in their best apparel, are led before the Thémpoo, who presents them with a stoup of liquor out of which they both drink, while he con-

tinues muttering some words in his unknown language: two small threads of cotton are then tied round the neck of the woman, and one round that of the man. These strings are never taken off afterwards, but allowed to fall away of themselves in the regular course of wear and tear, and are then not replaced. Lastly a small comb is presented to each by the Thémpoo, who again mutters something in his mysterious accents, and the bride is then taken away to her husband's house.

Great religious importance appears to be attached to the comb among the Kookies. The article itself consists merely of a number of thin slips of hard bamboo, pointed at both ends, placed in a row, and bound tightly and closely to one another at their centres, resembling when made, a coarse small tooth-comb. This is always worn entwined in the hair, which is long, and the Kookie never separates himself from it, it being considered a most unlucky omen to lose a comb. Each man has his own comb, and to use another's or to allow another to use his is considered equally improper and unclean, and subjects both parties to such withering contempt from others, that in many cases they do not survive it. Brothers even cannot use the same comb, man and wife being the only people allowed to do so. On the death of any individual his comb is buried with him, and his near relations break their combs, and remain for three or four days with dishevelled hair, after which new combs are again made.

The most strict rules exist forbidding too close intermarriage in families; cousins cannot be so allied. Widows are permitted to re-marry, but no woman can have two husbands. Legitimate children take precedence, in inheritance, of the elder illegitimate ones. But in default of legitimate issue a natural son succeeds to his father's property before all other male relations whatever. Daughters inherit no wealth, but live in their father or mother's house till married. It is not prohibited to intermarry with different clans, or even with Bengalis or Mussulmans. But even the former practice is much discouraged though sometimes practised, and the latter is never heard of. Kookie women, it is true, have been abducted, and become the concubines or slaves of some people in Cachar, but it is seldom the case. The Thadon and Shingshón clans are closely allied,

tradition declaring that the Thadon sprung from a father, and the Shingshón from his eldest son. Some intermarriages therefore, take place between these, and their royal families also occasionally give away daughters in marriage to each other. But there is greater objection and a good deal of ridicule attached to the marriage of a Thadon or Shingshón with a Chángsén or Lhungúm, although it is sometimes done, neither is it common for a Chángsén to marry a Lhungúm, and the same exclusive system prevails through the other petty clans of the Kookies, whose names even are too numerous to be mentioned.

It is at present perfectly impossible to estimate the entire Kookie population on this frontier, many tribes existing to the south and east with whom we have had as yet no connexion, and there being numbers in Manipore of whom little or nothing is known. In Cachar Proper about 1500 houses of all clans, but chiefly Lhungúms, pay Government rent, which would give a population of about 7500 for that part of the country. In N. Cachar, exclusive of old Kookies, there are 1200 rent-paying houses, giving a population of about 6000, supposing five to inhabit each house: of these the Chángsén clan are most numerous, the Thadon and Shingshón coming after, there being no Lhungúms in the country. In Manipore no correct computation can be made, but there may be as many in that country as in the whole of Cachar put together. But the greater part of the population, among whom are the Looshén, Télmok, Hankeep, Chomfoot, Solbee, Molbeem, and Thanguey Kookies, lie beyond our ken altogether in the vast unexplored territories to the south of Cachar and Manipore.

Oaths taken among the Kookies are held most sacred, and are never resorted to except on the most serious occasions, such as when a long feud is being healed up between two clans, or a treaty of alliance entered into. Both parties swear to maintain peace or good fellowship. A dhao is placed on the ground, and on it are arranged rice, salt, earth, fire and a tiger's tooth. The party swearing takes the dhao and puts the blade between his teeth, and biting it says: "May I be cut with the dhao, in war and in the field; may rice and salt fail me, my crops wither, and I die of hunger;

may fire burn all my worldly possessions, and the tiger devour me, if I am not faithful."

The solution of omens is left much to the priests, and their opinion is taken upon yolks of eggs and entrails of fowls, from which it is supposed the future is revealed. Teeth of tigers and other animals are carried about the person, suspended round the neck as talismans, and are supposed to preserve the individual wearing them from being devoured by wild animals. Hunters carry about a small round stone enclosed in a wicker-work basket, and believe that the presence of this in the jungles with them ensures good sport.

The Kookies are great hunters, and are passionately fond of the sport, looking upon it, next to war, as the noblest exercise for man. They kill tigers, deer and smaller game by means of poisoned arrows. The bow is a small one made of bamboo, and very slightly bent, the string being manufactured of bark. The arrow, the head of which has a barbed iron point, is about eighteen inches long, being drawn to the chest and not the ear, and therefore delivered with no great force, the destructive effect lying chiefly in the poison. With such an instrument the great art in hunting lies in stealthily approaching the animal near enough to deliver the arrow with effect, and in following it up after being wounded to the spot where it is found lying dead. In this the Kookies excel, being able to prowl about the jungle as noiselessly as tiger-cats, and being equal to North American Indians in distinguishing tracks. Tigers are also killed by spring bows with poisoned arrows set in the jungles, and by poisoned pánjies planted in their paths.

Elephants are slain in great numbers by the Kookies wherever they are to be had, not only the tusks but the flesh being highly prized. Parties of twenty and upwards go out in pursuit of them at a time. When some recent elephant track is discovered in the forest, two or three of the party ascend some convenient tree, whose branches overhang the track, the remainder follow it up, and having got on the other side of the herd, scare it towards the ambush by shouting, beating gongs, and discharging fire-arms. Here, while passing, the animals are assailed from above with long spears having huge iron barbs covered with deadly poison: every wound inflicted results

in the death of the animal at not more than half a mile from the spot on which he was hit. So wary are the elephants, however, that it is seldom that more than two out of a herd are killed. At the place where their game is found dead they commence cutting him up, and extract his tusks; laden with these and as much of the flesh as they can carry, they return home, and other parties go out and encamp in the neighbourhood of the carcase until they have entirely consumed it, or are driven away by the effluvia of decomposition. Portions of the flesh that they cannot immediately eat are dried and smoked to be kept for future consumption. The Kookies also hunt the methin or wild cow, which they have likewise succeeded in domesticating, having introduced the breed to Northern Cachar.

The deadly poison used by the Kookies is, they say, extracted from a tree which does not grow in these parts, but the article is brought to them for sale by tribes inhabiting the borders of Manipur. The substance is of a dark blue or black colour and of about the consistency of common rezin. To make it serviceable it is ground down with capsicum seeds and tobacco juice, so as to form a pulp, with which the weapons are smeared, cotton soaked in the mixture being also tied to the iron under the barb. I had once the cruelty to try the effect of this poison on two domestic fowls, to one I administered internally a dose equal to about two common sized pills, and I punctured one of the legs of the other, so as merely to draw blood, with a pointed bamboo about the size of a toothpick which had been dipped into the mixture. The latter died in twenty minutes without much apparent pain, and in the former no effects whatever could be perceived, and it may be crowing to the present day. Another poison called deo-bi, is used by the Kookies to kill fish, and has an intoxicating effect upon them, forcing them to the surface, when it is thrown into the water. The Kookies also spear fish, but have not much idea of catching them by the hook or net.

The dress and ornaments of the Kookies are most diverse, and some not wanting in taste. These articles are chiefly of their own manufacture, and they indent but seldom on Manchester for their cottons. They weave several kinds of cloth, of a coarse but

strong texture, and dye them with wild indigo and the munjattie dye, making the colours fast. They also make the thick rug or counterpaine in common with the old Kookies. Their dress consists commonly of coarse cloth tied round the waist, the end of which is allowed to hang down in front, like an apron, reaching as far as the knee; in cold weather a cloth is thrown over the shoulders. Those Kookies who have been much in the plains, have already taken to the dhotie and mirzai. All classes bind a cloth round their heads as a turban, and the more wealthy have it gaily ornamented with the red downy feather of the hullee pakee bird, and red ribbons of dyed goat's hair, fastening the whole down by a climstrap composed of a string of cowrie shells. The Rájáhs also wear a plume, consisting of the long tail feathers of the king-crow, to the number of fifty or sixty, tied in a bunch to a pointed stick or piece of iron which is stuck into the large knot of hair on the back of the head, many other sorts of plume consisting of feathers and goat's hair are worn. The poorer classes have invariable a large iron skewer or porcupine's quill stuck into the back knot, answering the double purpose of a tobacco pricker and a hair pin. A knitted bag is worn by most Kookies attached to a shoulder-belt of deer skin, tanned with the hair on or ornamented with cowrie shells; the dhao, a short triangular piece of iron, is also worn in a broad sheath, suspended by a shoulder-belt ornamented in the same manner. The more wealthy having the belt four or five inches broad, with six or seven rows of shells, between which are inlaid blue-beetle's wings, and the poorer people contenting themselves with two rows of shells on a narrow strip of leather. The sheath is further ornamented with a goat's tail pendant as a tassel. The very poor dispense with the sheath altogether, and carry their dhaos stuck into the cloth round their waists. The dhao has a small handle of brass or wood, the latter generally bound in cane or covered with leather, to which is attached, a tassel of goat's hair dyed red. Garters of goat's skin are worn below the knee, the beard of the goat and part of the skin of the neck being chosen for this purpose. The Kookies make two or three kinds of spears, one a light javelin with a long lancet-like point, and a haft of about four feet in length, and another of the same kind but with a pear-shaped head. The most common, however,

is an ungainly large bladed head, shaped like a diamond, the haft, with the exception of about a foot, being of metal also. Although the spear is commonly carried by the Kookies, they do not trust to it to the same extent as the Nagas, but prefer their dhaos, with which they are most expert. Kookie women likewise carry an iron spear or walking stick when travelling: this is shaped exactly like a straight spit with a button at one end as a handle. In war, the defensive armour of the Kookies consists of a breast piece made of rhinoceros's hide, which girds the whole body; it is suspended by the shoulders and tied behind, and is quite impervious to either spear thrown or arrow shot, but would be of no avail against a bullet.

A small and very peculiar shield is also carried in battle, its shape is that of a trapezoid with a length of two feet, and a mean breadth of fifteen inches; it is made of buffalo hide, and the upper or broader half is covered over with small round conical brass plates, overlapping one another, from which are pendant long tassels of goat's hair dyed red, which hang down on the lower half. This is suspended round the neck by a thong of leather, and has a handle on the inner side. This also is far from being bullet-proof. By far the most formidable means of defence, and it may be said of offence also, used by the Kookies, are small bamboo spikes commonly called "panjies." These are carried to the number of about a hundred, by each man equipped for battle, in small wicker-work quiver-shaped baskets. They are made of the hardest and best seasoned bamboos, are seldom more than six inches long, and only thick enough to prevent any great pliancy. They are pointed at both ends, at one only sufficiently so to enable them to be easily stuck into the ground, at the other as sharply as any lancet, and so hard is the bamboo, that it is able to take a fine enough edge to make it available in most surgical operations short of amputation, and a bamboo-knife is the only one used by these wild people, either in operating upon themselves, or in castrating bulls, pigs, &c.

The panjie thus made, is used in the defence of villages when an attack is expected, the whole of the ground round the villages, except the roads leading to it, being thickly planted with them, the roads themselves being always barricaded. A party retreating before superior numbers also avails itself of this mode of defence,

and care is taken while planting the panjies, to conceal them as far as circumstances will admit, by covering them with loose grass, &c. They are stuck in at a slight angle in direction of the party supposed to be advancing, and any foot placed upon them, with the whole weight of the body on it, is pierced from the sole right through to the instep, the individual being perfectly disabled. The wound inflicted is most dangerous, many dying from it, and it is invariably long in being healed. Moreover in very fierce feuds between the tribes it was the custom to have the panjies poisoned. Shoes even are not a sufficient guard against these panjies, for although a stout sole is able to resist them yet they pierce the sides, where the foot overlaps. The only method to counteract their use is carefully to pluck them out of the ground, and this causes great delay, and cannot be done when the advancing party is under fire.

The women wear a small blue cloth wrapped tightly round their thighs, and reaching from below the navel to the knee; another cloth is thrown over the shoulders. They have no head dress but a luxuriant crop of not coarse hair, which is parted in the middle, and plaited at the sides, being tied up behind in a knot. Armlets, bracelets, necklaces and earrings are worn by both sexes, the two former being generally made of brass, and very massive. A common armlet worn by the men consists of two semi-circular boar's tusks tied together so as to form a ring. And among the bracelets, one is hollow, having a leaden bullet inside it, which causes a tinkling sound on every movement of the wearer, and another of ivory, into which the wrist is slipped, is worn on the left hand by archers as a guard to prevent the bowstring hurting that hand, when released by the fingers of the right. Necklaces are made of red corneliau beads, or of white beads manufactured from shells by rubbing them down into small cylinders, and women wear necklaces of beads of a blue stone, very common among the Kookies. The Chángsén and Lhumghúm tribes bore their ears in the same manner as the old Kookies, and insert into the holes rings of silver or copper four or five inches in circumference, through which they again hang blue and red stones, attached by cotton threads. Rings of brass wire are worn on the fingers by both sexes.

The Kookies are much attached to their weapons and ornaments,

most of them being heir-looms, and handed down from father to son for many generations. Thus, although their most valuable ornaments are mere cornelian beads, they will not accept those of European cutting, at any thing like the same value which they attach to those of their own, which are rude and badly polished. They attach to some of these and to a stone called "Toinoo," about the size of a pigeon's egg, which I have never seen, and which is very rare, a most exorbitant price, valuing the latter at hundred methins, or about three thousand rupees. Family ornaments are therefore seldom in the market, and only change hands on the occasion of marriages between wealthy people and royal families.

Dancing does not appear to be a favourite amusement among the Kookies, and their dances are by no means interesting; the women dance less than the men, and their performances consist of a number of awkward steps and hops made with the knee-joint very much bent. The men have also a war-dance in which they flourish their dhaos, &c. But the acting is by no means so real as that of the Nagas. They have, however, a far better notion of music than any of the other tribes, and there is something solemn and plaintive, though monotonous, in many of their tunes. One in particular which is sung by large parties, has all the solemnity of sacred music, and might easily be so adapted. Their songs are mostly in a language which the people themselves do not understand, although it is undoubtedly a dialect of their own. Most probably the old form of speech in which they were originally composed has become obsolete, and the words have been handed down merely to preserve the tune. The only fragment, to which, after some research, I have been able to attach any meaning, is the following, which is not entirely wanting in poetical merit:

"Jólkhénga" chéngying ding yong kadaime
"Chaltuitánga" "Kimleném" tóñga gñáiye,
Cháh pang wikai chabunge kanéme.

which, being interpreted, is—

I also wish to go to Jólkheng—sighing
On the mountain of "Chaltui" I hear Kimlenem,
And I have become like a bent bamboo.

This when rendered into the modern dialect, without reference to the metre is as follows :—

Keiyong "Jólkhenga" chénading kadoiye
"Chaltui" Chinga, "Kimlenem" ahaina kagñaiye
Chál akón to bunge ka oome.

Chaltui tang or ching means the mountain of "chaltui," chal and tui being two words signifying bamboos and water. The comparison of himself to a bent bamboo, by the poet, may therefore, have some punning reference to the name of the mountain, on which his mistress is sighing. These old songs are the only ones generally known, and common to all. There are also modern compositions among the people, but each man is generally his own poet, and musical composer, and his works die with him. The Kookies use a musical instrument called the "ghoshem," which consists of a hollowed pumpkin, into which are inserted seven bamboo pipes, which are regulated by stops, a mouth-piece is inserted at the stalk end of the pumpkin, and the different notes are produced both by inspiration and respiration. It is an instrument of no great power but has a soft and pleasing sound. Chimes are also beaten upon gongs of different sizes with good effect. The largest of these gongs are sometimes upwards of two feet in diameter, and have a fine deep sound; they are valued at about thirty or forty rupees each. A small gong about six inches or less in diameter is used as a war-gong, and is beaten during battle by an individual appointed for the purpose. The sound can be heard for four or five miles round. This gong is attached to the families of the Rájáhs, and is handed down as an heir-loom of great value, and is consequently never parted with.

The manufacture of gongs is not carried on among the Kookies: they were brought originally from their own country, and are doubtless of Burmese handiwork.

The Kookies bury their dead, and no religious rite appears to be attached to the ceremony. The bodies, even of the poor are kept above ground as long as possible, and during that time the house of the deceased is open to all comers, who walk in and look at the corpse, and are entertained at the expense of the estate of the deceased. Indeed to such an extent is this love for lying in state carried, that the bodies of wealthy men, or of Rájáhs, are dried

over a slow fire until the flesh gets smoked and hardened to the bone, they are then dressed and laid out, and kept in this way for a month or two before being finally deposited in the earth. During the whole of this time, the hospitality in the house of mourning is unbounded, methins, cows, buffaloes, horses, pigs, goats and dogs being slain in numbers to feast the guests, portions of the flesh being likewise sent to distant villages where any friends of the family may reside. It is believed that, while the body is above ground, all the animals slain on its account will be attached to it in the world of shades, and hence the great profusion. On the death of a Ráják the entire population are supposed to go and see his corpse lying in state, and partake of the hospitality. When the time has expired, the body wrapped in clothes is placed upon a bier, having several kinds of eatables and wines placed near its head, and a dhao and spear by its side. The burying-ground lies only a short distance out of the village, and here, a grave being dug, the body is placed in a mat coffin together with eatables and drink (the weapons being taken away) and covered up with earth. The skulls of all the animals slaughtered during the lying-in-state are then planted on posts all round the grave. It is thought necessary when a Ráják dies to have the fresh skull of one enemy at least stuck over his grave, that enemy also being supposed to become a slave of the deceased in the next world. For this purpose it used to be the custom for a party to undertake a war-expedition as soon as the death of the Ráják was known, and return in time for the funeral with the required trophy; but at present the Kookies in North Cachar can no longer do their kings this honour, and therefore, they content themselves with getting an elephant's head if they can, and if not, satisfy themselves by slaying hecatombs of cattle and game.

An account of North Cachar would be incomplete without some reference to the wild and powerful tribes of Angamie and Kutcha Nagas, which occupy the tract of land lying immediately to the east of the province. These people are the terror and scourge of the inhabitants of N. Cachar, and are in the habit of making constant forays into the country, burning the villages of the peaceful Meekirs and Nagas, and sparing neither sex nor age.

The country inhabited by the Angamies is, I have been told, very different from North Cachar and resembles more the Cossiah and Jynteah territory, an absence of bamboo jungle and substitution of grass in its place being the chief peculiarities. This being the case the method of cultivation carried on by the Angamies is materially different from that in these hills. There being no jungle to cut down, the low lands are terraced into small fields which are regularly irrigated and permanently put under cultivation.

Living near the Angamies are the Kutcha Nagas, who are likewise independent and warlike. Little is known concerning this tribe, and I believe it has only recently been ascertained that they are distinct from their neighbours, than whom they are far less powerful.

The Angamie Nagas select for the sites of their villages the most inaccessible peaks of the highest hills, and generally fortify themselves in their position with stockades and ditches, as well as by planting panjies in the neighbourhood. Their houses and domestic arrangements resemble in a great measure those of the Aroong Nagas; and they have much the same idea of religion. The management of communities is also on precisely the same principles, although conducted on a much larger scale. The Angamies have no recognized head or chief, although they elect a spokesman, who, to all intents and purposes is powerless and irresponsible; hence the great difficulty we have had in dealing with this tribe, the arrangements made with the spokesmen being set at naught by the villagers.

The Angamie and Kutcha Naga tribes are computed at about 125,000 individuals, divided into about one hundred villages, of which four among the Angamies, viz. Mozumah, Jopshemah, Konamah and Koheemah are the most powerful, and exact tribute from the rest.

These villages are frequently at war and feud with one another. But they appear to conduct hostilities among themselves in a more civilized manner than when they attack the inhabitants of Cachar; for, however fiercely the feud may be raging between the men, the women of the contending parties visit one another at their different villages, without being subject to violation or detention. In warfare generally, however, the Angamies are ruthless savages, as subtle as

the serpent and fierce as the tiger. They conduct their approaches with every circumstance of stealth and wariness, prowling in the jungles for days in the vicinity of the village they intend to attack, if it is too strong to be carried by a coup-de-main, watching for an opportunity when the inhabitants may be completely off their guard. When resistance is expected, their general time for an onslaught is just before day-light. The village is fired and the savages rush through it massacring the inhabitants as they attempt to escape from the flames. When, however, plunder is the object of the foray (the more common reasons being long established feuds, and among young warriors generally only the ambition to distinguish themselves), and the attacked party are greatly the weaker, the village is boldly entered in broad day, every soul except those reserved for slaves being put to the sword, their heads together with the plunder being carried off as trophies, and the village fired on departure. In the retreat, laden as they are with plunder, they march with the greatest celerity, making it quite impossible for regular troops to follow them, did even the nature of the ground permit. Bad as the communication is among the hills, the Angamies do not trust to its channels, but plunging into the densest jungles, follow the tracks of wild beasts, and the courses of small streams, reaching their homes without fear of being overtaken.

The Angamies have not only displayed great enterprise in war, but they are also remarkable among the tribes for their love of commerce. Many of them find their way down to the marts in Cachar and Assam, some proceed as far as Gowhatti, Sylhet and Dacca, and some have even gone as far as Calcutta in pursuit of trade. They bring down from their hills, ivory, wax, and cloths manufactured from the nettle fibre, and take up in exchange salt, brass wire, shells, gunpowder, &c. &c. They fully appreciate the superiority of fire-arms over other weapons, and have succeeded in providing themselves with a considerable number of muskets, which they use with effect. Their other weapons are the spear and dhao, the former a most formidable instrument with a broad blade, and sometimes as many as three or four barbed prongs down the sides, the haft being ornamented with goat's hair, dyed red, bound round it. In defence

they use panjies, making them somewhat larger than the Kookies, and carry a huge shield some five or six feet in length by one and a half broad, made of mat-work with bear and tiger skins stretched over it and decorated at the sides and top with feathers and plumes of goat's hair. These shields are worn, attached by a thong, round the neck, in the centre of the inner side there is also a handle for the grasp, and the whole is supposed to cover the individual from the sole of the foot to the crown of the head, but it seems to be a very cumbrous and ineffectual defence, although most adroitly managed by those who carry it. The Angamie dress consists of a black cloth kilt, very tastefully ornamented with white cowrie shells rubbed to a fine polish, wrapped tightly round the thighs. A covering of coarse black or white cloth is thrown over the shoulders, and the leg just above the calf is girded with a number of thin cane strings. In travelling, the whole of the leg from the ankle to the knee is enveloped in gaiters made of mat-work and dyed red and yellow. In war a collar is worn ornamented with red dyed goat's hair and shells.

The Angamies are very fond of ornaments, and prize shells and brass-wire more even than the Aroong Nagas.

They are expert thieves and glory in the art, for among them, as with the Spartans of old, theft is only dishonourable and obnoxious to punishment when discovered in the act of being committed.

One custom practised among them may perhaps give a hint to some gourmands in civilized life, who consider that whipping a sucking pig to death, instead of legitimately sacrificing it, developes in a greater measure the delicacy of the flavor. The Angamies, when preparing a fowl for the table, pluck all the feathers off while the animal is still alive, and releasing it, stone it to death, maintaining that the flesh is highly improved by this process!

During the settlement of the frontier on the occasion of the lapse of Cachar to our Government in 1832, the Angamies were first brought to our notice, having endeavoured to intercept our officers when crossing the hills between Manipur and Assam. They were attacked and defeated with ease owing to their having at that time no knowledge of fire-arms. Nevertheless in the succeeding year, an expedition into their hills was met with the most determined resistance.

It appears to have been our object at first and for some time, under the supposition that the country lay within our territories, to exert a control over the tribe, and exact a certain tribute, however small, in token of our supremacy; and for this reason, as well as to punish and prevent the recurrence of the inroads and forays which the Angamies were in the habit of periodically making into North Cachar and the plains, no less than ten expeditions were sent against them. Some of these were directly hostile, others pacific and conciliatory, but none were attended with any permanently beneficial effects, it being impossible to negotiate with a people who have no recognized head, and exceedingly difficult to punish a tribe so subtle in effecting their escape. Villages were indeed burned, but the inhabitants always escaped, and little or no inconvenience was caused by the fire, as the houses being merely built of reeds and grass could be replaced at a day's notice when the troops had evacuated the site. As for the exaction of tribute, in most cases the Gaon Booras or spokesmen agreed most readily to the measure, but the majority of the villages failed to ratify the arrangement, and prepared to resist the exaction by force of arms.

In 1849, a darogah on duty in the hills, however, having mixed himself up in some private differences among the tribe, was murdered, together with several of the sepoys of the guard which accompanied him, and to punish this outrage Lieut. Vincent was sent up to the hills with a small detachment of troops. He found the hostile party strongly entrenched in a hill fort in the neighbourhood of Konamah, and his force being too weak to dislodge them, he endeavoured during the entire season to prevent them from communicating with other villages, obtaining supplies, or cultivating their own fields. His detachment was even too small for this purpose, and his failure in effecting it so encouraged the evil-disposed of the tribe, that the garrison was much augmented, and many of the villages which had formerly remained neutral declared their hostility to us, although some still remained faithful. In 1850, therefore, it was found necessary to send up a force of five hundred men with two three-pounder guns to capture the fort, and bring the hostile clans to terms. The fort was evacuated after a siege of sixteen hours, and rased to the ground, but the garrison all escaped.

In subsequent operations against the disaffected villages, who displayed no fear of our power, but frequently challenged us to come on and fight disrespectfully calling our three-pounders "choongas" or bamboo tubes, one action took place which resulted in their gaining some experience of the object of their contempt. A large body of the village of Kekremah, being obliged to retreat before our troops and allies in a somewhat open piece of country, were subjected to the influence of grape, and some three hundred were placed hors-de-combat. But no advantage was taken of this victory, and all the troops were shortly afterwards withdrawn from the hills, Government having determined to abandon all control over the country, and to mix itself no further in its petty internal warfare. Our Angamie auxiliaries having raised for themselves a host of enemies in their own country were offered sites and protection in our territory, but preferred holding their own at home: and a European officer was deputed to North Cachar with a body of troops supposed to be sufficient to place the province in an effectual state of defence. A strictly defensive policy has been maintained ever since, and although several bloody forays have been lately made by the Angamies on some of our villages in the plains, no measures have been taken to retaliate.

At present the eastern frontier of N. Cachar is defended by a line of stockaded outposts, about fifteen or twenty miles apart, between which communication is kept up by means of patrols, the guards stop and disarm all foreigners approaching the frontier, and although, owing to the intricacy of the country, they might easily be evaded by a foe so subtle as the Angamie, yet the system has hitherto been effectual, none of the enemy having attempted to push through.

Another, and I should think a far more effectual way of quieting and civilizing this rude tribe, has lately been proposed by Lieut. Bivar, and has been partially adopted. The Angamies are soldiers both by nature and taste, and they evince the greatest eagerness to get employment under us. Sanction has been given to the entertainment of twenty recruits of the tribe in the Nowgong Militia as an experiment, and the measure has succeeded beyond expectation, the young men entertained having become good soldiers, and displaying

great pride in their arms and profession. Any number of the tribe could now be enlisted, so great is their desire for service, and this presents a most sure way of eventually quieting the people, those entertained acting in a measure as hostages for the good conduct of their village.

Left undisturbed from external aggression, the internal feuds among the tribes being put to an end, subject to the influence of a powerful and benign Government, opened out by lines of good permanent road which are every where in projection, and undergoing with all a very slight taxation, there is every chance of North Cachar eventually repaying the care and expense which is being lavished upon it. Plunged, as the inhabitants at present are, in the darkest ignorance, even when contrasted with the population of any other portion of our territories, trusting as they do solely to themselves for every article of consumption, and unacquainted as they are with every portion of the world beyond their own hills, it would be folly to look immediately for the production of such effects. But it only requires the diffusion of a little enlightenment, and a proper direction of the energies of the people, when that enlightenment has developed their enterprise, to make the inhabitants of these hills a flourishing and happy community. The partial civilization which has reached the Cachárees has been inculcated by those least qualified to administer it. They sought from the Bengali amlahs of our courts the arts by which to acquire preferment and use power. But this is no type of the effect that might be produced were the education of these wild and simple people placed in other hands, were only a little of that labour which is daily being expended, with so little success, in uprooting the prejudices of stiff-necked Hindus and Muhammedans, applied to the Kookies and Nagas.

Throughout India I know of no field for missionary labour which gives promise of such fertility as the hills of Northern Cachar, and yet no missionary has penetrated them. Here are no mighty rocks in the shape of bráhmanical philosophies to be blasted. No deep ravines like Muhammedan sensualism to be filled up, but the field lies open for cultivation, and merely requires the rank weeds of evil passions to be kept down, and the small stones of petty superstition to be lifted, to be ready for the fructification of the good seed.

## APPENDIX.

### I.

*Comparative Vocabulary of the Manipoorie, Cacharee, Thadon, Aroong, Gnámie, Béteh, and Meekir languages.*

#### Orthography.

The following rules are maintained throughout the vocabulary :—

*Vowels.*

| | | | |
|---|---|---|---|
| á | pronounced like a in father. | a | pronounced like a in man. |
| é | e in there. | e | e in men. |
| í | i in police . | i | i in pin. |
| ó | o in note. | o | o in not. |
| ú | u in pull. | u | u in fun. |
| oo | oo in moon. | | |

*Consonants*

have the same sounds as in English with the following restrictions;

g is always a hard sound.

h is always aspirated.

j is much softer than in Eng.

n is nasal when overlined.

s is never sounded like z.

w and v are never used as vowels.

ph is never pronounced like f.

gh and kh are like the Persian Ghain and Khe.

sh as in shine.

th always like those letters in ho*th*ouse.

ng pronounced like ng in singing.

gñ an indescribable nasal sound.

c is never used by itself, but in combination with h to express the sound of ch in "Church."

*Diphthongs.*

æ pronounced like "Aye."

ai pronounced like ai in aisle.

ao has the full sound of both letters.

aú has the full sound of both letters.

ei pronounced like i in "mite."

ii pronounced like ei in "being."

oi ditto oi in "oil."

vi almost like "we."

eu as eau in beautiful.

ou as ou in bounty.

In other combinations of the vowels, they have each their full sound, the first being generally grave and the second short.

Note—The Manipoorie and Cacharee languages have a written character of their own, both derived from the Bengali. But none of the others have any written form whatever.

*Comparative Vocabulary of some of the various languages*

| *English.* | *Manipoorie.* | *Cacharee.* | *Kookie.* | *Arúng Naga.* | *Gnámi Naga.* |
|---|---|---|---|---|---|
| Fire | Mei | Wai | Mei | Mí | Mí |
| Water | Ishing | Dí | Tui | Doi | Zú |
| Earth | Laipák | Hlá | Lai | Gudei | Kathi |
| Air | Núngsit | Bár | Hooi | Inkai | Thikha |
| Sky | Nidhoripak | Nakhásou | Vánpi | Tinkim | Keruké |
| Cloud | Laichil | Hádí | Mei | Tingroi | Kemhoo |
| Fog | Laichin tháha | Goál | Mei | Komó | Bhoonícha |
| Smoke | Mei khoo | Wai khúdi | Meikhoo | Míká | Mikhoo |
| Sun | Númit | Saíng | Ni | Tingnaimek | Naki |
| Moon | Thá | Daíng | Lha | Hekéú | Thirr |
| Star | Thó mucha | Hátrai | Ashi | Higgí | Themú |
| Lightning | Nóng tháng | Saráptheí | Kólaphe | Higgi geo | Khésija |
| Thunder | Nóng khónge | Gúroomba | Vánaginge | Tinkim pokó | Tísé |
| Rain | Nóng | Hádí [der | Gó | Ting roi [neo | Terá |
| Rainhow | Chúm tháng | Jeng long má- | Toghui | Inkei va | Temú |
| Mountain | Ching | Hájoo | Ching | Rihí | Chikha |
| Plain | Tumpa | Hádi rají | Phai | Déje kui | Mejoo |
| River | Túrél | Díhoo | Tui dúng | Gneo kí | Kerr |
| Jungle | Náruk | Hágra | Humla | Nam kang | Nha |
| Stone | Núng | Lónthai | Shong | Jú kang | Keché |
| Wood | Sing | Bón | Thing | Shíng | Sí |
| Gold | Suna | Gujao | Lángkecha | Kuchák | .. |
| Silver | Loopa | Goophoo | Danka | Gofoo | Raka hurr |
| Iron | Yót | Sér | Thik | Hegei | Théjirr |
| Brass | Pithrai | Fitlai | Shúmeng | Hutákei | Rení |
| Copper | Kóri | Támai | Shúmshun | Hutálo | .. |
| Day | Númit | Saíng | Ni | Nai | Ja |
| Night | Ahing | Hór | Jing | Ting mooi | Ti |
| Year | Chahí | Meithei | Kúm | Kúm | Chi |
| Month | Thá | Daíng | Lha | Kéú | Kre |
| Light | Mañgál | Junábi | Ava | Léba | Krevi |
| Darkness | Amumha | Andár | Ajing | Múida | Kremhoo |
| God | Lai | Madai | Puthén | Hurá | Durhoma |
| Demon | Shuroi | Hasong | Hilo | Ghumpeo | Medovi |
| Man | Mi-Nipa | Subung | Mi | Jai maná | Ma |
| Woman | Núpi | Masainjoo | Númei | Mi púi | Thenúma |
| Boy | Angángnipa | Ancha | Chapung | Hená mi | Nichúma |
| Girl | Augáng núpi | Masainjú an- | Chanoo | Hená púina | Thenúnoma |
| Animal | Shá | Mí [cha | Ghunhing | Mákou | Nhutshe |
| Bird | Uchék | Dau | Vacha | Hinrooi | Pura |
| Insect | Til | Yí oong | Ghunhingcha | Inkét | Khuno |
| Friend | Marúp | Káfiyúng | Ghól | Gnai | Kenuma |
| Enemy | Lál | Ángko naislé- | Ghál | Gnougailuk | Nosó |
| Father | Ipá | Báha [ába | Pa | Apeo | Apú |
| Mother | Imá | Mámá | Noo | Apúi | Azó |
| Brother | Nao | Dáda | Náo | Así | Shajou |
| Sister | Ichém-Ichul | Bíbí | Naonoo | Así púi | Lúpú |
| Son | Ichá | Busa | Pashul | Aná | No |
| Daughter | Ichánúpi | Búsoo | Pashulnoo | Aná púi | Ponoiye |
| Elephant | Sámoo | Miyúng | Saipi | Supó | Choo |
| Rhinoceros | Gunda | Genda | Chulki khat | Kúnda | Kedéh |
| Buffalo | Iroi | Misip | Siloi | Gúbui | Rilí |
| Methin | Sundung | Míthung | Shél | Bui sáng | Húi |
| Cow | Sul | Músoo | Silát | Kútóm | Mithoo |

*spoken on the Eastern Frontier of Bengal.*

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Mei | Me | All similar. |
| Tui | Lang | Compare old and new K. and Aroong Naga. |
| Runeng | Long le | Compare Man. new K. and Meekir. |
| Ikshi | Túmon | |
| Rivân | Shineng | Old and new K. |
| Shoom | Arvé | |
| Ramikhoo | Mihí | |
| Meikhoo | Ihón | Man. Cach. new K. Ar. Gna. and old K. |
| Iní | Arní | New K. old K. and Meekir. |
| Ithlhá | Cheklo | Man. new K. and old K. |
| Arshi | Cheklo long- | Old and new K. |
| Kóláfe | Herai [sho | Ditto. |
| Khóri | Seneng kang- | |
| Arí el | Arvé [reng | Old K. and Meekir. |
| Nishumjél | Múkat | |
| Rum | Ilong | Man. new K. and Gnamie. |
| Arijól | Hidí hawár | Man. and new Kookie. |
| Tui dúng | Láng roi | Man. new and old K. |
| Rumilha | Inum | New and old Kookie. |
| Shíng | Arlong | Man. new K. old K. and Meekir. |
| Thing | Theng | Man. new K. Ar. old K. and Meekir. |
| Rángke chuk | Hon ér | New K. Ar. and old K. |
| Shúm chéng | Hon lok | Cach. and Ar. Man. and Hind. |
| Chéng chí | Inchin | Man. and Cach. and Mee. old and new K. |
| Shúm eng | Pitoi | Man. Cach. and Meekir. Hind. old and new Kookie. |
| Shúmshén | Taman | Old and new Kookie. Cach. and Meekir. Hind. |
| Ni | Arni | New K. Ar. old K. and Meekir. |
| Jing | Ajo | Man. new K. and old K. |
| Kúmka | Ni kunshi | New K. and Ar. and old K. Man. and Gnami. |
| Ithlha | Chi klou you | Man. new and old K. |
| Vár | Thiklóklár | New K. and old K. |
| Amók | Intingong | Cach. Hind. |
| Puthín | Arnam | New and old K. |
| Khori | Hi í | |
| Mí | Ar léng | Man. new K. Gna. and old K. |
| Núpung | Ar losó | Man. new K. and old K. |
| Naipung | Oso | Man. and Cach. new and old K. |
| Naité | Arlosó oso | |
| Mírhing | Thío | Cach. and old Kookie. |
| Ivá | Vo | Man. new K. and old K. |
| Thungthám | Inthán | |
| Ról | Korte | New and old K. |
| Rál | Lángseletong | Man. new and old K. |
| Pa | Pó | All. |
| Noo | Ipei | Man. and Cach. Ar. and Meekir old and new K. |
| Nai | Ík | Man. old and new K. |
| Oonai | Ingyirpi | |
| Rothur | Neso pó | |
| Dongma | Niso pi | |
| Sai pui | Inur | Man. new K. Ar. and old K. |
| Gonda | Gendoo | All except new K. Hind. |
| Siloi | Chélong | Man. new and old K. |
| Shétuk | Chai | |
| Sirát | Cháinong | Man. new and old K. |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Arroong Naga.* | *Gnámi Naga.* |
|---|---|---|---|---|---|
| Horse | Sagól | Górai | Sakol | Hokón | Kirr |
| Goat | Huméng | Búroon | Kél | Kim é í | Tunoo |
| Tiger | Kei | Misí | Hoompi | Rág di | Tukhoo |
| Bear | Sawom | Músú hoorma | Voompi | Hoogoom | Thagha |
| Leopard | Kajéngla | Misi hátrai | Kám kei | Hurrea kou | Kékhi |
| Monkey | Yong | Maúksa | Jong | Sozó | Takui |
| Hog | Ok | Honó | Vo | Kuhák | Thavó |
| Dog | Hwí | Sisa | Wicha | Settei | Thafú |
| Cat | Houdóng | Álú | Méngcha | Miyou na | Lenó |
| Rat | Oochí | Mojó | Jeu cha | Suzá | Thejeu |
| Porcupine | Subou dém | Midí | Sukoo | Ting oñ | Soké |
| Badger | Nó ok | .... | Nulváng | .... | .... |
| Eagle | Khurung | Douling hákri | Moo | Killé | Kujoa |
| Peacock | Wahóng | Doudai | Vahóng | Wí éng | The vo |
| Crow | Kwák | Dou kha | Váa | Iñg kák | Jekho |
| Hen | Yél | Dou nó | Á | In rúi | Thevú |
| Toucan | Láng mei | Dou yúng | Vapól | Keré | Tephoo |
| Fish | Gná | Ná | Gña | Suka | Kho |
| Alligator | Goriál | Gérai | Olé | Hutcha | Khoggra |
| Lizard | Choom | Shoréma | Tung | Tim póng | Kho ta vo |
| Crab | Wai khoo | Khang krai | Aé | Hugga | Khóhi |
| Snake | Lil | Juboo | Gool | Hin neo | Tin hí |
| Centipede | Náchul | Yung grema | Chin ling | Ting numba | Zurr |
| Earth-worm | Thintou | Háni júboo | Tungtél | Dei neo | Phi kwe |
| Caterpillar | Kúmjéng | Yooma | Língmúl | Ting óm ba | Khúdo |
| Butterfly | Kúrák | Dáma | Péng pelep | Im péng ha | Sopvo |
| Fly | Hai ying | Thámpi ma | Thou | Tamaina | Thevi |
| Mosquitoe | Káng | Thám pi | Thou shi | Tamai | Sheré |
| Beetle | Ching thao | Jugai | Téng te | Kuzui | Ti lí |
| Ant | Kukchéng | Khai sing ma | Shími | In tiá wa | Thohe |
| White ant | Lai shou | Thelem hoori [ma | Lai kha | Kaching na | Mha che |
| Head | Mokó | Khoró | Loo | Mi pei | Uchú |
| Body | Musa | Sáo | Apúm | Mi púm | Umo |
| Legs | Khóng | Ega | Kéng | Mí pí | U phi |
| Arms | Khút | Yao | Khút | Mí vá | Uhoo |
| Face | Mai | Mú kháng | Mai | Mí joo | U ze |
| Neck | Gnuk shum | Godó | Kungón | Mi ghóng | Uvó |
| Back | Nungul | Síma | Tóng tun | Mi ching | Uché |
| Belly | Púk | Hó | Oí | Mi búng | Uva |
| Shoulder | Léngbál | Phao krúng | Lein kou | Mi kai | Ubukhe |
| Hips | Ning jón | Yáfóng | Kong goo | Mi kóa | Ute |
| Chest | Thapák | Khabou | Op | Miga | Umerr |
| Waist | Khowáng | Jéng khóng | Kóng | Mikia | Uchecha |
| Eyes | Mit | Moo | Mit | Mi mík | Umhí |
| Ears | Na | Kumáo | Bil | Mi kon | Uneu |
| Mouth | Chil | Khú | Kum | Mi moo i | Ume |
| Nose | Na tól | Goong | Ná | Mi néo | Unheu |
| Lips | Chimbál | Khújér | Né | Mi mui jo | Usso |
| Cheeks | Khajai | Khou lai | Béng | Mi hiya | Uje |
| Chin | Khadáng | Khoosga | Khá | Mi gudang | Umekheu |
| Teeth | Yá | Hátai | Há | Mi geo | Uhoo |
| Hair | Shum | Khanai | Shum | Mi tám | Uchitha |
| Beard | Koi | Kham phor | Khámúl | Mi mui mai | Umékhú ma |
| Moustache | Koi | Ditto | Múmúl | Mi mui ma | Utuma |
| Navel | Khoe | Khot mai | Lai | Mi tula | Uló |
| Elbow | Khút ning | Yá úskóng | Tong hoo | Mi sao | Ubúthoo |

| *Beteli Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Sakor | Lósai | Man. new and old K. |
| Kél | Bí | Old and new K. |
| Ikei | Teké | Man. old K. and Meekir. |
| Ivom | Thó wám | Man. new K. old K. and Meekir. |
| Ikei | Bong kroi | Old K. and new K. See tiger. |
| Ijong | Thé rou | Man. old and new K. |
| Vok | Phák | Man. new K. Gna. and old K. |
| Wíte | Mathán | Man. old and new K. |
| Iméng | Méng | New K. Ar. old K. and Meekir. |
| Jeute | Phiú | Man. new K. Gna. and old K. |
| Saphe vok | Yokhi bongom | New K. and Gna. |
| Sumai tha | .... | |
| Varháng | Ghomoo so | |
| Tokrai | Orám | Man. new K. and Ar. |
| Vá ák | Okák | Man. new K. Ar. old K. and Meekir. |
| Ár | Wo | New and old K. |
| Pool ráng | Wo trung | |
| Igñá | Wók | Man. Cach. new and old K. |
| Ové | Temong | Old and new K. |
| Surtung | .... | Man. and Cach. Hind old and new K. |
| Iáe | Che he | Ditto. |
| Rool | Pheroi | Ditto. |
| Rití | You bohoo | |
| Shenil | Roi chi he | |
| Lhóng múl | Inke | Old and new K. |
| Phelép | Inki ple ple | New K. Ar. old K. and Meekir. |
| Ithoi | Chi tím | Cach. and Ar. new K. Gna. and old K. |
| Phirse díp | Tim krang | |
| Tleng tlér | Inkét | Old and new K. |
| Thoi chím | Misó | |
| Bung ba | Phelong | Man. and new K. |
| Loo | Iphoo | Old and new K. |
| Chúmpúm | I bang | New K. Ar. and old K. |
| Tiké | Kéng. | Man. new K. and Meekir. |
| Bán jung | Ri | Man. and new Kookie. |
| Mhai | Maháng | Man. new K. old K. and Meekir. |
| Or | Sithok | Man. new K. Ar. |
| Búk | Inoong | Man. and Meekir. |
| Phoom | Ipok | Ditto. |
| Dar búl | Iphang | Man. and new K. |
| Khél | Kéng thám | |
| Táng | Iuing | |
| Kong | Ivám | Man. Cach. new and old K. |
| Mit | Mék | Man. new K. Ar. old K. and Meekir. |
| Kúr | Inó | Man. Gna. and Meekir. |
| Bai | Ingho | |
| Nár | Ino kan | Man. new K. and old K. |
| Nir | Intoor | New and old K. |
| Ri kí | Ing óm | |
| Kha | Bíp | Man. new K. Gna. and old K. |
| Ha | Isso | Ditto. |
| Shum | Choo | Man. new and old K. |
| Kha múl | Imoom | New and old K. |
| Nur múl | Moom athá | Ditto. |
| Lai | Chétó | Ditto. |
| Iki | Retúng de | |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| Wrist | Khút jéng | Yao khadú | Khút gnóñg | Mi bángoa | U búche |
| Hand | Khút pák | Yao | Khut páng | Miba | U bijú |
| Thumb | Khút bi | Yao síma | Khút pi | Júng pui | U bi kirr |
| Finger | Khút ól | Yao sí | Khut júng | Mi bak rang | U bichena |
| Nail | Khút jin | Yao skoor | Tin | Mi chin | U bíche |
| Thigh | Phai gul | Ya khí tú | Phei pi | Mi ne | U dó |
| Knee | Khú oo | Yaskoo | Kúg boo | Mi kúkból | U kúja |
| Calf | Khú bom | Yaskoo ní bukhla | Tungai | Mi pi | U phicha |
| Ankle | Khú jéng | Ya gúng to | Akhoomit | Mi hi mik | Uphi mi |
| Foot | Khúng pa | Ya pha | Kéng pang | Mi pi pa | Uphi jú |
| Toe | Khóng tol | Yá si | Keng | Mi pi karung | Uphi krú |
| Penis | Tí | Lí | Jung | Mi shung | Uthó |
| Testicles | Túrm | Li dou di | Nitil moo | Mi tinka | Utjú |
| Vulva | Thoo | Shifou | Shoo | He moo | Pomé |
| Anus | Thúl | Khi foo | Tó | Mi roong ki | Ponú |
| Paps | Khóm | Abó | Noi | Mi túm | Unoo |
| Skin | Ool | Bugoor | Vún | Begai | Ujen |
| Bone | Surroo | Bégréng | Goo | Pura | Uroo |
| Blood | Í | Thí | Thí | He zai | Thuza |
| Horns | Sují | Bogróng | Kí | Bucheo | Póka |
| Wings | Musa | Bugráng | Alhá | Pukun | Poshen |
| Feathers | Mutoo | Gráng sí | Va mál | Pukun kut | Poma |
| Tail | Mumei | Bérmai | Amei | Pimí | Pomí |
| Trunk | Munától | Búsoodi | Amol | Mui jóa | Pon hicha |
| Claws | Khúngúl | Yauskoor | Kéng | Min chin | Popí che |
| Hoof | Khú jin | Yauskoor | Kéng | Pánchin | Pomoo |
| Tusks | Mayá | Baha tai | Aha | Begim | Pohoo |
| Hind leg | Khúdúng | Yahougni biá-ga [ga | Anúng kéng | Bepí | Pophí |
| Fore leg | Kbúmáng | Sagungni bia- | Ama kéng | Bebá | Pop boo |
| Tree | Úpál | Bóng pháng | Thing le | Ching bang | Siho |
| Root | Mará | Yádér | Thing júng | Pamá | Pómi |
| Brauch | Masá | Bedép | Aká | Bekei | Poche |
| Leaf | Maná | Pulai | Ná | Puneo | Pon ñeu |
| Fruit | Mahí | Buthai | Thing gá | Vichí | Rossi |
| Flower | Lei | Bobár | Pa béng | Be pá | Na phoo |
| Bud | Lei apómba | Bothorai | A moom | Vichinoo | The bé |
| Creeper | Úrí | Dúkha | Khao vui | Bung rui | Kerre |
| Mango | Hai nou | Thei joo | Hai | Ba chi | Merro |
| Plantain | Lapoi | Thei loo | Mót | Rangón ji | Nhási |
| Jack | Thei bóng | Thei fi oong | Lám khong | Tujóung ji | .... |
| Bamboo | Wá | Wá | Gó | Inria | Kurra |
| Cane | Lí | Rái | Tai tíng | Rehát | Kurré |
| Cotton | La sing | Khoon | Put jám | Ka lung | Cbochha |
| Paddy | Phou | Mái | Cháng | Cheo | Tulha |
| Rice | Cheng | Mai róng | Cháng cháng | Hebi | Sikko |
| Cucumber | Thubi | Thei smoo | Chung mai | Ga ina | Chottó |
| Pumpkin | Khúng dúm | Khao khúloo | Oom nou | Hemána | Cho pá |
| Bengan | Kha mél | Phántheu | Dádil | Intookchi | Kíkheu |
| Indian corn | Chúg já | Mai mugh lai | Kól boo | Mitak | Jaro sí |
| Yam | Há | Thafile | Há | Kebei | .... |
| Potatoe | Aloo | Tha | Báha | Herou | Raphé |
| Dál | Hawai | Subai dail | Havai | Dail | Dáli |
| Capsicum | Morok | Múrsai | Mulcha | Ráchi | Chesi |
| Tobacco | Hi ták | Duma bulai | Dúmóm | Inkeo neo | Khopirr |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Musoi | Ri kán | Man. and new K. |
| Khút ja | Ri pa | Man. new and old K. |
| Khútpui | Ri mún pi | Ditto. |
| Khútchul | Ri ki mún | |
| Khútteu | Ri chi mi | Man. new K. and Ar. |
| Il | Keng tham | Man. and new K. |
| Rakhúk | Keng koo | All. |
| Phei rai | Kengsár lí | |
| Ar tui | Keng ar kong | |
| Phei ja | Kéng pak | Man. and new K. and Meekir. |
| Pui | Kengchúmoon | New K. and Meekir. |
| Jung | Chelék | Man. and Cach.—new and old K. |
| Kétilroo | Búmutti | Old and new K. |
| Shoo | Mák | Man. new and old K. |
| Pinta bing | Hidum | |
| Arnoo | Mok | New K. Gna. and old K. |
| Vún | Areng | New and old K. |
| Roo | Ripí | Man. new K. Gna. and old K. |
| Thí | Arí | All. |
| Rakí | Anoo | Old and new K. |
| Va pól | Arréng | |
| Tórai | Ipák | |
| Vajún | Armê | All, except old K. |
| Rha mú | Inárakove | |
| Rhamú | Tekea chimi | |
| Phei tin | Abót | |
| Ha | Inerer sho | Man. new and old K. |
| Anung ke | Akéng ti | |
| Áma ke | Akengaphrang | |
| Thing lér | Théng pi | New K. old K. and Meekir. |
| Thing re júng | Angkoor | New and old K. Man. Ar. and Gna. |
| Thing et rung | Árŏ | |
| Ná | Arvŏ | Man. new K. Ar. Gna. and old K. |
| Thing rá | A thé | New and old K. |
| Pár | Ang phár | Cach. new K. Ar. old K. and Meekir |
| Rhemoom | Athé so | Old and new K. |
| Leishung | Ri káng | Man. new K. Ar. and Meekir. |
| Thai hai | Thár ve | Man. new K. old K. and Meekir. |
| Ri mót | Ping hoo | New and old K. |
| Lám khóng | Yang phong | All. |
| Ró mai | Chék | Man. and Cach.—Ar. and Gna. old and new K. |
| Tíng | Prí | Cach. new K. and old K. |
| Chon | Phé ló | Cach. and old K. |
| Fáng | Shók | New and old K. |
| Ifai | Sháng | Man. new K. and Meekir. |
| Fung mát | Thoi té | |
| Tui oom | Bong hom | New and old K. |
| Munta | Hép pi | |
| Vai mím | Théng te | |
| Burha | Hén | Man. new and old K. also Cach. and Meekir. |
| Bál | Phiroi | Cach. new K. and old K. Man. Hind. |
| Fúvai | Chophe | Man. new K. and old K. Cach. Ar. and Gna. Hind. |
| Mircha | Bérik | |
| Dúma | Dúmár wo | Cach. new K. old K. and Meekir. |

| *English.* | *Manipúrie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| Pán | Pana | Mithi | Pán | Mithei | Mi thé ni |
| Betel-nut | Koá | Gó ai | Thing mulcha | Jekwaji | Ruhó si |
| Turmeric | Jéngung | Sú loodi | Ayéng | Roomnai | Vichoo |
| Onion | Tilou | Sá lung | Phúloon | Tingra | Shemeré |
| Reed | Shing út | Khukri | Phai | Umhou | Bhóti |
| Grass | Napi | Sám | Umpa | Reheo | Nha |
| Bark | Ukoo | Búgoor | Thing hó | Ching gei | Sibó |
| Husk | Wai | Jí jai | Ho | Kapai | Pekhí |
| Juice | Mei hí | Bidí | Thei tui | Budooi | Kakhe |
| Gum | Lei nup | Áthá | Thing nai | Insongdui | Sicha |
| Cultivation | Lou | Phudaing | Lou | Loo | Lé |
| Flesh | Ma shá | Mógong | Shaphé | Himei | Thémo |
| Fat | Ma háo | Buthao | Shathao | Pacha | Possé |
| Oil | Thao | Thao | Sathao | Pathao dui | Gákri |
| Salt | Thúm | Sém | Chí | Inchai | Mécha |
| Milk | Sung om | Musúng gidi | Noi tui | Katúmting dui | Mí túna jeu |
| "Shráb" | Yoo | Joo | Joo | Jáo | Juháro |
| Boiled meat | Sha thónge | Songba | Sha hón sa | Gi láng looba | Thémo gha |
| Roast meat | Sha yaire | Yao ha | Sha kasangta | Buzai | Thémo lí |
| Broth | Sha irí | Rúba | Sha tui | Kaláng ba | Ghá jú |
| Rice, cooked | Chák | Makhum | Boo-An. | Tuk | Té |
| Eating vessel | Púkhum | Jíbani bostú | Kong | Teorába | Mekhó |
| Drinking ves- | Khújai | Lúng báni hos- | Bél | Sagráha | Ketto |
| Ladle [sel | Khabai | Khao khú [tú | Khuk ke | Hettia | Lívú |
| Ivory | Sámu mayá | Míyoong hátai | Sai ha | Hipo akim | Choohoo |
| Wax | Khoi roo | Brés lai | Khói loo | Taghá | Mekwi bó |
| Village | Khúl | Nó lai | Khó | Koló | Nirá |
| House | Yim | Nó | In | Kí | Kí |
| Door | Thóng jil | Dér gá | Kót kha | Kumúi | Ki khá |
| Window | Mi hút | Dérgá sa | Kót cha | Kumui poina | Kikhá kachú |
| Mat | Phuk | Yám | Jam phil | Ka síng | Chópra |
| Basket | Thúmo | Kháng kra | Bing | Pura | Khódi |
| Box | Upoo | Sundúk | Tá khoop | Ching kók | Goozó |
| Bag | Kháo | Jóli | Dip-Khaodip | Cheka | Lókho |
| Cloth | Phí | Rí | Pon | Pai | Khwê |
| Spear | Tá | Jóng | Téngcha | Hengeo | Ruñgoo |
| "Dhao" | Tháng | Sísóng | Chem | Hekké | Zhé |
| Knife | Hij rang | Khutari | Chemcha | Kepoina | Júkhina |
| Bow | Lirúng | Jilí | Gophel | He hoina | Jilí |
| Arrow | Tél | Bula | Thul | He hoina too | Thil rá |
| Shield | Chúngoí | Phí | Lúm jém | Ing gei | Pezú |
| "Pánjies" | Shou | Makhou | Shou | Hettoo | Kethié |
| Musket | Núng mei | Hílai | Mei púm | Higí mi | Mi shí |
| Poison | Hoo | Bísh | Thulun | Inkai | Therri |
| Boat | Hi | Roong | Kóng | Nei kwo | Roo |
| Coffin | Koo | Mi roong | Lhan khoo | Kachin kwo | Mó koo |
| One | Amá | Másí | Khut | Kut | Po |
| Two | Ani | Máguni | Ni | Kaná | Kana |
| Three | Ahoom | Mág thám | Thúm | Kachúm | Se |
| Four | Mari | Mabrí | Lí | Madai | Da |
| Five | Mañga | Maboñga | Ñga | Miñg ou | Peñgoo |
| Six | Taiúk | Mado | Goop | Sherúk | Shúroo |
| Seven | Taret | Ma sní | Suggi | Siná | Thena |
| Eight | Nipál | Ma jai | Get | Tisat | Theta |
| Nine | Má pal | Ma skoo | Kó | Sikoo i | The koo |
| Ten | Tará | Mají | Sóm | Kerou | Kerr |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Rum pán | Bíthi | Cach. Ar. Gna. and Meekir. Man. new and old K. Hind. |
| Tát pung | Kóve | Man. and Cach. Hind. |
| Ai shél | Thár mit | Man. and new K. |
| Korporoon | Arsún | |
| Phai vó | Inkor | New and old K. |
| Lhoi | Báp | |
| Thing hok | Ahoo | New and old K. and Meekir. |
| Hoo | Phéke | New and old K. |
| Thei toor | Alang | Ditto. |
| Thing tui | Aphík | |
| Loi | Rít | Man. new K. Ar. Gna. and old K. |
| Sa | Ok | Man. new and old K. |
| Sa thai | Athoo | Man. Cach. new K. and old K. |
| Sa thai | Yáng thoo | Man. Cach. new K. Ar. and old K. |
| Chi | Intí | New and old K. |
| Rumutoi | Moghláng | |
| Zukoo | Hor | All. |
| Ámhin sa | Og toon | |
| Sa kin it tak | Karmoo | |
| Sa tui | Ki oop | Old and new K. |
| Boo | Án | New and old K. and Meekir. |
| Mai ráng | Chó hurmoo | |
| Khéng bél | Jún hurmoo | |
| Hai ho | Lúm hor | |
| Sai ha | Inár aso | Man. Cach. new K. and old K. |
| Khoi loo | Jó ir | Man. new and old K. |
| Khó | Rong so | Man. new K. Ar. and old K. |
| In | Hém | Man. new and old K. Ar. and Gna. |
| In kot | Iháp | New K. Gna. and old K. |
| Nompai | Ihápso | New K. and Gna. |
| Jamphir | Tar | Cach. new K. and old K. |
| Rebing | Hák | New and old K. |
| Shúmdup | Píra | Cach. and old K. Hind. |
| Shúm kop | Jámli | Man. and new K. |
| Poon | Pé | All. |
| Ifei | Chirpla | |
| Chem | Nukpa | Old and new K. |
| Katouri | Tári | Cach. old K. Meekir. and Hind. |
| Thul pui | Thai | Man. Cach. and Gna. |
| Thul | Lip lha | Man. new K. Gna. and old K. |
| Ipho | Chóng | Man. and Meekir. |
| Pai fúng | Káng hoo | Man. Cach. and new K. |
| Silai | Hílé | Cacharie and Meekir, and old K. Ar. and Gna. |
| Toor | Bí | Cach. and Meekir. Hind. |
| Ri koong | Télong [koop | All, except Meekir. |
| Túm | Telong puchi | All, except old K. and Meekir. |
| Khat | Hisí | Man. and Cach. new K. Ar. and old K., Meekir and Cach. |
| Nik | Hi ní | All. |
| Thúm | Ki thóm | All, except Gna. |
| Li | Phi lí | All, except Ar. and Gna. and those together. |
| Rañga | Phañga | All, every one nasal. |
| Irook | Therok | All, except Cach. |
| Surri | Thæroksi | Cach. and Ar. old and new K. |
| Riét | Nér kép | New and old K. |
| Ikók | Sir kép | Cach. new K. Ar. Gna. and old K. |
| Sóm | Kép | Old and new K. Ar. Gna. and Meekir. |

| *English.* | *Manipúrie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| Eleven | Tará ma thoi | Mají se | Sóm le khut | Kerou ka keo | Kero po |
| Twelve | Tará ni thoi | Maji ní | Sóm le ní | Kerou she kena keo [chum | Keró kana |
| Thirteen | Tarához thoi | Majig thum | Sóm le thúm | Kerou she ke- | Kero se |
| Twenty | Kool | Ma khon | Sóm ni | Ñg kai | Mekoo |
| Thirty | Kúnthra | Ma túm ji | Sóm thúm | Hém rou | Serr |
| Forty | Niphoo | Biság ni | Sóm lí | Hed ai | Lhí da |
| Fifty | Yáng khai | Mádán | Sóm ñga | Reng éo | Lhi peñgú |
| Sixty | Hoom phoo | Biság tám | Sóm goop | Deghro | Lhí shúroo |
| Seventy | Hoomphútará | Biság tám maji | Sóm suggi | Dek shi ná | Lhí thena |
| Eighty | Mari phoo | Bisábri | Sóm gét | Dek ti sat | Lhi theta |
| Ninety | Mari phútará | Bisábri ji | Sóm kó | Dek si kui | Lhi thekoo |
| A hundred | Chámá | Ruza si | Za khut | Hai | Kra |
| A thousand | Lising amá | Rizing si | Sháng khut | Chang | Kra kerr |
| A half | Makhai | Gujé shi | A kim | Pam pi | Téta |
| I | Ei | Ang | Kei | I' | A |
| Thou | Nung | Noo | Nung | Nung | No |
| He, she, it | Ma | Bo | Hi-Khú | Wi | Loo |
| We | Ei khoi | Júng | Kei ho | Anui | Uko |
| Ye | Nung khoi | Nurao | Nung ho | Nung nui | Neko |
| They | Ma khoi | Burao | Hi ho | Wi nui | Lúko |
| Mine | Ei gi | Ani | Kei ma | Agoo | Ave |
| Thine | Nunggi | Nooni | Nung ma | Nung goo | Nove |
| His | Magi | Bóni | Hima | Wi goo | Lúve |
| Ours | Ei khoi gi | Júng ni | Kei hó a | Anui goo | Ukove |
| Yours | Nung khoi gi | Nuraoní | Nung hó a | Nung mu goo | Nekove |
| Theirs | Ma khoi gi | Buraoni | Hi hó a | Wi niu goo | Lukove |
| Who | Kunáno | Séré | Koi | Chow lo | Sópo gha |
| Which | Kuri | Súmoo | Koi-I' | Indai | Kaji ho |
| What ? | Kuri | Súmoo | I' | Indai | Kajiho |
| This | A shí | E'bo | Hi | Aida | Hou |
| That | A dú | Hou bo | Hú | Wida | Loo |
| The other | Ama sung ama | Hohogú hun | A dung | Chí je ma | Kagrí |
| Any | Khura | Isaba | Thim khut | Dai ko | Kékri |
| All | Púmña puk | Krúg bo | A hon | Chi je kum | Mha poi |
| North | Awáng | Ootur | Lum shoo | Dui mi | .... |
| South | Mukha | Dukin | Lum tou | Dui ro | .... |
| East | Nóng po | Sain ja | Sá lum | Kapé peo | .... |
| West | Nóng chúp | Sain juróba | Lhung lum | Keowai peo | .... |
| Right | Yét | Yáoda | Chang lum | Hezut | Uj á tha |
| Left | Oi | Yáo si | Vei lum | I'h | U ví cha |
| Far | Arápa | Jaing bí | Ghum chéng | Deoda | Cha cha |
| Near | Nuglé | Champa bí | Nai cha | Ná da | Jeu |
| Long | Asháng ba | Lou hí | Sao pi | Té da | Kacchha |
| Short | Téle | Soon thé hi | Chóm sa | Katé rúnda | Ka jeu |
| High | Wánge | Joo bí | A sháñge | Hooda | Kurke |
| Low | Néme | Hí bí | Ném cha | Na hí da | Kur no |
| Much | Yáme | Báng bi | Tum pi | Kéda | Krápaze |
| Little | Yám de | Báng ya lai | Tóm sa | Chumda | Kadú cho |
| Great | Chou ha | Dé hí | Alíu | Dí da | Kat hekiyé |
| Small | Apí sa | Khasébí | Néo cha | Cheida | Ka chú |
| Good | Apha bá | Humhí | Apha é | I'da | Kavi |
| Bad | Phutte | Hum ya | Aghilou é | Shiá da | Kasó |
| Broad | Marák | Wárbí | Avai | Bakundi da | Merró |
| Narrow | Marák piye. | Warya | Avai úmpoi | Bakuu chei da | Ka jeu cha |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Sóm lei khut | Kresi | |
| Sóm lei nik | Kre ni | |
| Sóm lei thúm | Kréga thom | |
| Sóm nik | Ing koi | |
| Sóm thúm | Thóm kep | |
| Sóm lí | Phili kep | |
| Sóm Rañgá | Phóngo kep | |
| Sóm irook | Therok kep | |
| Sóm surri | Therok si kep | |
| Sóm riét | Therok ner kep | |
| Sóm i kók | Therok sir kep | |
| Rizá | Pháró sí | Cach. new K. and old K. |
| Shanka | Soori si | Man. and Cach. new K. Ar. and old K. |
| Ari kip | Achitĭm | |
| Kei | Nge | Man. new K. Ar. Gna. and old K. Cach. and Meekir. |
| Nung | Nung | All. |
| Khú | Náng | New and old K. |
| Kei ma ni | Ñge túm | Man. new K. and Gna. |
| Nungmani | Nung túm | Ditto. |
| Khú mani | Náng túm | Ditto. |
| Keimarhung | Ngé li | |
| Nungmarhung | Nung li | |
| Khú marhung | Náng li | |
| Keimani rhung [rhung | Nge túm li | |
| Nungmani | Nung túm li | |
| Khúmani | Nang túm li | |
| Tú pei [rhung | Mád lo | |
| Tú | Po Pi lo | |
| Ĭm | Pí | Old and new K. |
| Kha kha | Láhe lo | |
| Khú a kha | Ha lá he lo | |
| Idung | Halá kaprét | |
| Achín tek | Athunga thung | |
| Aréng kun | Habadoo | |
| Lum in thén | Ní rép | Cacb. Hind. |
| Lum tou | Ne rép | New and old K. Cach. and Hind. |
| Ni sho ting | Ni hang | |
| Klai klák | Ni chi | |
| Chang lum | Aré | New and old K. |
| Voi lum | Arvi | Man. new and old K. and Meekir. |
| Rum mohl | Hi lo ving | |
| Kho nai | Ti bo kher | Man. new K. Ar. and old K. |
| Asai | Ding pi | New and old K. |
| Atoi | Thí het | |
| Ri sháng | Kung toi pi | Man. new and old K. |
| Ri ním | Thí ket | Ditto. |
| An tum | Ke óng pi | New and old K. |
| An rhoi | Angé | |
| Alien bák | Kithé pi | New and old K. |
| Achín | Bi hek | |
| Athut | Me ong | New and old K. |
| Thumake | Heñg ó | |
| Akhung | Thédoong | |
| Akhung o muk | Bi hék | |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| Straight | Chúme | Beléng hí | Ajáng pét | Kanjeida | Me jú |
| Crooked | Khóye | Be léng ya | Akon | Injeimada | Ruhúi |
| Round | Akoeva | Giding loo loo | Aki kól | Bopúmda | Merrú |
| Square | Chithek mari | Goróng birí | Aning li | Kakémdai da | Poke chú |
| Old | Hanooba | Gurasa | Tésé | Gachi pao da | Pichú |
| Young | Nahá | Nága | Tung wál | Rahungda | Ki sa |
| Old | Hanooha | Gujám | Alui | Peréda | Ka só |
| New | A nou ha | Gudain | Atha | Kachi ha da | Kasa |
| Ripe | A múu ba | Goo moon | Ata | Kamewa da | Ros sí me |
| Raw | A sung ba | Gu thung | Ashéle | Kán gei ba | Memo lo |
| Sweet | A thúm ha | Díhi | A too ye | Ka kúm ba | Moo |
| Sour | A sin ha | Khahi | A thoo | Ka ká ba | Khú |
| Bitter | A khá ha | Me jér bi | A kba | Teo shi a ba | Khwéh |
| Hot | A sá ha | Doong bi | Asa | Ka tom ba | Lé |
| Cold | A ying ha | Gusain bi | A dup | Kagei va | Mé koo |
| Handsome | A phu ja ba | Majang bi | Apha munge | Kíva | Bí showe |
| Ugly | Suk thi ha | Nérgoo | Aphamung poi | Tunul eda | Mú showe |
| Fat | Ma hou | Dé bi | A thao e | Dída | Kajou |
| Lean | Mayáng kunge | Rám hi | Aghon ge | Ri da | Kache |
| Thick | .... | Ru ja bi | Asáe | Sheo hi | Ka jú |
| Thin | .... | Báhi | A páe | Hepeo le | Ka ché |
| Heavy | Arúmba | Ri sí bi | A gíé | Reta da | Meshisha we |
| Light | Ayáng ba | Ri jeng bi | Ajáng vél | Chá da | Med ja |
| Light | Añgál ha | Juná bi | Aváe | Pului da | Jáhi |
| Dark | A mum ba | Juná ya | Ajínge | Lui shia da | Jáso |
| Hard | A kun ba | Rou bi | A tá é | Chida | Resú |
| Soft | A thot pa | Mi you hi | A néme | Noo da | Re mú |
| Sharp | Thouye | Boo hi | Ahéme | Lia da | Pol ri ví se |
| Blunt | Thoude | Boo ya | Amo le | Numhda | Polejé |
| Dear | Tán ge | Dorou bi | Aháe | Hilí chi da | Mháre bujé |
| Cheap | Honge | Lai hi | Aháye | Seo bi | Pomavishoe |
| Difficult | Chi le | Afut | Akhoe | Na tri da | .... |
| Easy | Chinde | Humbilei dúde | Aháye | Ibida | .... |
| Clean | Añgo ha | Gúfoo | Añgoué | Hapong da | Mesá |
| Dirty | A motpa | Nér goo | Anéne | Tunule da | Kesho |
| Rough | Nánde | Miliya | Ahume | Rui mi ma | Mehé |
| Smooth | Nále | Milibi | Anáme | Nei da | Nejú se |
| Strong | Kule | Hum hi | Aháde | Ki wuroon da | Zába |
| Weak | Sole | Bolgori | A doi e | Paranchi da | Pojújú |
| Early | Thúna | Sagung | Majépmin | Hinchonai da | Zi wurte |
| Late | Thengba | Yahoong | Agei ye | Namai da | Menovur |
| Wise | Yám singe | Akhol humbi | Achinge | Mina kída | Porhi |
| Foolish | A punge | Akhol giri | Añgole | Bi sui gále | Kemhoué |
| Merry | Noye | Malouha | Atotne | Hupatoule da | Depo lí simo |
| Grave | A suk pa | Malouya | Atot loue | Pa tou me ne | Deposísa we |
| Blind | Mitángba | Gána | Amitcho | Mikchiti da | Pomítche |
| Lame | Kong tekpa | Khora | Akeng bai | Cha a di da | Runga |
| Deaf | Napung ba | Natong | Anuñg oñge | Kón pung | Ponyieravo |
| Dumb | Lei rom ba | Ábrá | Apao moe | Pula shia da | De púlilho |
| Black | Amoo ha | Goosoom | Avum | Tígring | Kitti |
| White | Añgou ba | Goophoo | Ahung | Hapong | Kikra |
| Red | Añgáñg ba | Gujao | Ashun | Kuchák | Merí |
| Blue | Asung ha | Soom jli jli | Lí leng | Tigring ring | Losekwé |
| Green | Na pú | Ga khrung | Bongao eng | Gerou | Lomoo |
| Yellow | Yéng ung | Súloo delai | Ayéng | Injin | Thek koo |
| Be | .... | Dong | Hín | .... | .... |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Athloon thai | Kéng ong | |
| Koi | Keng ke | Man. new and old K. |
| Hulrhoom | Ching bar sít | Man. and new K. |
| Arh ki | Krong phlí | |
| Tur | Chár búra | |
| Lhung vál | Ríso | Man. and Cach. new K. and old K. |
| Alhui | Abarím | New and old K. |
| Athur | Akami | New and old K. |
| Iroo | Kemén | Man. and Cach. |
| Thu make | Avei | Ditto. |
| Athai | Dokong | Man. new and old K. |
| Tai muk | Kho dát | |
| Num she | Thorong | Man. and new K. and Gna. |
| Alúm | Sodák | Man. and new K. |
| Adai | Kángsám | New and old K. |
| Athut rai | Doi vét tong | Man. and new K. |
| A shét ruk | Lángo | |
| In rai | The ong | Man. and new K. |
| Kong | Chúngkréng lo | Man. new and old K. |
| Alein ool | Arthát | |
| Achin ool | Arong | |
| Arik | Ardiyong | |
| Jáng bai | Arjáng tang | Man. new K. old K. and Meekir, also Cach. |
| Avár | Lok lán | New and old K. |
| Jána jing | Lok lén | Cach. new and old K. |
| Akhir | Ang tang | |
| Ar ném | Káng dúk | New and old K. |
| Añgai | Rhé ong | |
| Añgai muk | Rhé rhé | |
| Ari chung | Ador so ong | |
| Aol | Ador me ong | |
| Antak | Púkahoi ma | |
| Aol | Nong a me lo | |
| Arthéng | Kilop | Man. and new K. |
| Anim | Hingo | New and old K. |
| Anthir | Ching bár be | |
| Anám | Ching bár lo | Man. new and old K. |
| Ar hut | Méchun | |
| Cho kino | Aboi avé | |
| Imhá kun | Aphrung | |
| Hong jám | Aphí | |
| Long thúloi | Aning a mé | Man. and new K. Cach. Hind. |
| An tlo | Aning lángo | New and old K. Cach. Hind. |
| Thú jerr | Chipinung | |
| Jer muk | Chipinung le | |
| Amitcho | Ameka silo | Man. new K. Ar. old K. and Meekir, also Gna. |
| Aoi | Kéng ko | Man. new K. and Meekir. |
| Ashét | Ano káng tong | Cach and Ar. |
| Bai bui | A lumave | |
| Avom | Aki í | New and old K. |
| Atik | A ki lo | |
| Ashin | Kér | New and old K. |
| Adúm | Aki loo | |
| Arhing | Aki et | |
| Añgoi | Hon et | Man. and new K. |
| Níng | Dám not | |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| Remain | Lei o | Song | Umin | Mákre | Thello |
| Do | Tou o | Dáng | Bolin | Mateo lo | Síle |
| Live | Leikho | Tháng | Hing in | Ríng lao | Satahé |
| Die | Shíro | Thí | Thí in | Chei lao | Satalé |
| Eat | Cháo | Jí | Nén | Jeo lao | Chiche |
| Drink | Thou o | Loong | Donin | Sag lao | Kato |
| Sleep | Hibo | Thoo | I moo in | Je lao | Zelé |
| Wake | Hougolo | Bájá | Kung in | Chú lao | Shé |
| Laugh | No o | Miní | Nooyin | Nui lao | Noo é |
| Weep | Kupbo | Gurá | Kupmin | Háb lao | Krá le |
| Speak | Haio | Jo | Shoiyin | Ráng lao | Poo le |
| Hear | Táo | Khoná | Gná jin | Sheo lao | Runí le |
| Know | Khungo | Booji | Hén | Chi lao | Sí we |
| Sing | Sao | Rija | Sán | Leo teo lao | Cháliche |
| Dance | Jagoi sao | Bai | Lám in | Lém lao | Kareli le |
| Walk | Chulo | Hím | Kul sonin | Tul lao | Tosú le |
| Run | Ché lo | Khai | Tájin | Págh lao | Ta lé |
| Fall | Túro | Gulai | Toon | Kou lao | Krichélé |
| Stand | Lébo | Song | Ding in | Sáb lao | Sé lé |
| Sit | Phumo | Khám | Touvin | Intao lao | Bá le |
| Want | Nio | Sain | Thoomin | Kerao | Ma chhále |
| Have | Tillo | Nai song | Moon | Peilao | Gnú le |
| Take | Lou o | Lá lá | Lán | Loo lao | Lé lé |
| Seek | Thio | Sumai | Holin | Peo lao | Phú le |
| Get | Khungo | Mei kháti | Moon | Dao dú mei | Gnú le |
| Give | Pi o | Rí | Pén | Pé lao | Chú le |
| Carry | Pú o | Láng hi tung | Chojin | Tei je ta lao | Pekho le |
| Bring | Púrú o | Laboo | Hin chojin | Tei wung lao | Pephirí le |
| Take away | Púkho | Láng | Lanchojin | Tei lo | Petá lé |
| Lift up | Thánga lao | Súgoo | Domin | Pésé lé | Tei joo lao |
| Put down | Thumo | Deng | Koi yin | Pejé lé | Kai lao |
| Cut | Yalo | Dá in | Sádin | Dú le | Bí lao |
| Tear | Shé to | Sújí | Loi é in | Pho le | Páng lao |
| Bite | Chi o | Wai | Pednin | Mekíche | Inkí lao |
| Pull | Chingo | Súdúng | Lo jin | Mherású | Jupa lao |
| Push | Ilo | Hai gár | Shonin | Khúshú le | Hépa lao |
| Strike | Yai yo | Soo | Déng in | Vúchú le | Beo lao |
| Kill | Hato o | Dotai gár | Voli in | Vúra sátawe | Beo chán lao |
| Bury | Phum jilo | Phoob | Voo yin | Khrúawe | Bai lao |
| Burn | Thá o | Sao | Gou vin | Rewale | Roo lao |
| Love | Chá lo | Khusao | Doi yin | Ní shéwe | Pemi lao |
| Hate | Páng múno | Naisié | Doi hi in | Animo yé | Gnou wai lao |
| Fear | Ki o | Khín | Kichán | Télé | Hing lao |
| Be angry | Sá o | Thám si baigo | Lúng sán | Poní mo le | Lúng púm lao |
| Quarrel | Khnno | Nám ji lai | Kiná vin | Kaghí le | Hegé lao |
| Steal | Húra lo | Khao | Goo in | Raghoo le | Huga lao |
| Buy | Lei o | Burai | Chon | Krí le | Lui lao |
| Sell | Yo lo | Phaing | Jo in | Zole | Jo lao |
| Work | Sú o | Koosi dung | Tong in | Bnán chi che | Ma teo ra lao |
| Play | Suno | Mulao | Ki káp min | Thudo chi che | He pá teo lao |
| Depart | Chn lo | Thang | Chén | Tota che | Tacho lao |
| Come | Láo | Phai | Húug in | Phir che | Wáng lao |
| Arrive | Thungo | So tha | Túng in | Chole | Chang ne lao |
| Jump | Chongo [go | Khai lung | Chom in | Too le | Pakchú lao |
| Hop | Khoñgy chon- | Khere khre | Ki báj in | Reliye | Koi hoine ta lao |
| Fly | Pai yo | Boor | Léng in | Parakhamá | Lém chu lao |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Umrese | Kahóng ta | New and old K. |
| Thorese | Inhoinot | Man. and old K. |
| Hingro | Akireing do | New K. Ar. old K. and Meekir. |
| Thíro | Thi not | Cach. new K. old K. and Meekir. |
| Néng | Chólo | Man. Gna. and Meekir new and old K. |
| In | Júnón | |
| Rhumúng | Ínon | New and old K. |
| Thungron | Thúr non | Man. new and old K. |
| Inui | Káng nek | All except Cach. and Meekir. |
| Ishun | Cheroo | Man. and new K. |
| Hil ro | Tha not | Cach. and new K. |
| Riñgai | Areu lo | New and old K. |
| Nar hé | Jinsonot | New and old K. Cach. Hind. |
| Hui jám | Ló not | Man. and new K. |
| Ilám | Chi dán not | New K. Ar. and old K. |
| Anóm | Dám | Man. Hind. |
| Herai | Kikát | New K. and Gna. |
| Kelir | Krep not | Man. and new K. |
| Iding | Knrjáp | New and old K. |
| I thúng rou | Kang ni | Ditto |
| Kur chok | Háng not | |
| Mútak | .. ... | New and old K. |
| Va lur | E' nót | All except Meekir. |
| Tag hám | Nép not | |
| Mútak | Long lo | New and old K. |
| Péro | Pi not | Man. new K. Ar. old K. and Meekir. |
| Achoi | E'ndum not | New and old K. |
| Húng lur | Vá non | |
| Choitero | Pó non | New K. and Cacharee. |
| Domro | Rúng nót | New and old K. |
| Atul | Bí not | New K. and Ar. |
| Aleng | Thú not | |
| Atette | Mi sek pet | |
| Kis he | Korak | |
| Hai kair | Boong not | |
| Hai tín ro | Doinot | |
| A khong | Chók not | |
| Ahém | Doi het | |
| Pém púm | Kipíp | |
| Ei hál | Thú vók | |
| I dit ro | A ning do | |
| I dit muk | Ani lungo | Man. Cach. new K. and old K. |
| Kitti bák | Hi jim | |
| Aning a thik | Aning kithi | Man. and new K. |
| Ras hól | A chí voi | |
| In roo | Khang hoo | New K. Gna. and old K. |
| Choi | Nám non | Man. and Ar. new and old K. |
| Joi | Jór non | All except Cach. |
| Tirro | Akám do | |
| Ridai | Jui du nang | |
| Ro ró | Dám | Man. and new K. |
| Húngro | Wáng | New and old K. Ar. and Meekir. |
| Túng ro | Lé lo | Man. new and old K. |
| Ri tóp | Katung lo | Man. and new K. |
| A oi | Kung jár | |
| Vong ro | Pashi í | |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Angami Naga.* | *Aroong Naga.* |
|---|---|---|---|---|---|
| Sneeze | A thika lo | Haisoo | Chín | Rathá le | Kátesei lao |
| Snore | Nakhó o | Goro | Na hámin | Zeme khró le | Panékwa lao |
| Fart | Moi thó o | Khiboo | Vei sun gin | Pavishú le | Imhílao |
| Belch | Thug geo | Hunglúma | Sai i in | Merú le | Tisatao |
| Cough | Lo kho ó | Goosoo | Khoon | Rokhú le | Inkhou lao |
| Whisper | Khoushélo | Musáh | Kihou goo vin | Kanipú le | Binhína lao |
| Bellow, Call | Kou ó | Rouhijeroo | Kou vin | Kési lé | Koosa lao |
| See | Yén go | Nai | Vén | Píché | Gnó lao |
| Ask | Hungo | Shoong | Dongin | Kuche phí Ie | Gneoga lao |
| Answer | Khúmo | Thi dí | Don bútnin | Dépoole | Rang pa lao |
| Bind | Púlo | Khádi | Kánin | Phále | Pi lao |
| Loosen | Thó o | Khooroo | Lhumin | Pishú le | He phei lao |
| Smell | Namo | Mudoosnai | Ná in | Théng úle | Num ghai lao |
| I go | Ei chule | Ang thang nung | Ka ché | Ita rá ta | A phi jewe |
| Thou goest | Nung chule | Noo thang doo | Na ché | Nung ta ra ta | No phi jewe |
| He goes | Ma chule | Bo thang doo | A ché | Wi turata | Loo phi jewe |
| We go | Ei khoi chule | Júng thang doo | Kei ho kache | Anui táratá | Uko phi jewe |
| Ye go | Meng khoi chule | Nurao thang dou [doo | Nung ho nache | Nung nui tu-rata | Neko phi jewe |
| They go | Ma khoi chule | Burao thang | Hi ho ache | Wi nui tarata | Lúko phi jéwe |
| I went | Ei chulú re | Ang thang ha | Kaché ta | Ita tita | A phi shéwe |
| I will go | Ei chukin í | Ang thang nung dou | Chénge | I ta túta | A phi tówe |
| I go not | Ei chuloe | Ang thang ya | Kaché hi e | I tám rei | Aphi mo jewe |
| I did not go | Ei chut ri | Ang thang bágri | Kache ta hie | I tám i lei | Aphi mo shewe |
| I will not go | Ei chuloe | Ang thang ya | Che hí inge | I ta tá ta | Aphi mo towe |
| I wish to go | Ei chutnin ge | Ang thang ma majúng doo | Kache nome | I ta nei ta | Akaphi chowe |
| I can go | Ei chut pag num guni | Ang thang phoore | Kache theie | I ta dui | Akaphi tomú |
| I may go | Ei chulogaphei | Ang thangete humbi | Kache aphae | I ta chei í [loulo | Aphi le vi |
| Let us go | Ei chutba pío | Angoo thang mari | Kei ei ché sain | Achupei ta [lao | A bo phi che |
| Go thou | Nung chukro | Noo thang | Chétán | Nung tachó | No phi che |
| Do not go | Chu kuno | Da thang | Che hi in | Thusho | Phi he |
| Give me | Ei gñóuda pio | Ané ri | Kei ei pén [in | Ahang pé lao | A chú |
| Come here | Arídu láo | Era phai | Hikoma hung- | Aiga pei lao | Haki phir |
| Be silent | Tum i leio | Proo proo dong | Pao po hén | Re re bum lao | Depú he |
| Take this away | Asi púkho | Eho kho lang | Hin lán chójin | Mateta lao | Pe voche |
| Bring that here | A'si purwo | Houbo kho | Hu hin chójin | Wiche tepa lao | Loo phi phirte |
| Yes | Hoi | Aú [lábo | Hénge | E'oo | U''we |
| No | Nate | Niañ | ... | E'h | Mówe |
| Why | Karigi tumuk | Súmúni | I' dínga | Dai lou | Kéle |
| How | Kurum tauna | Bédehé | I' to bung | Dai dou sha | Kidísi lega |
| How much | Kayá [ge | Bisí lai | Iját | Daijou | Kajé ki ga |
| How large | Kayá chouba | Bisí dére | I' té línum | Dai gúm di lao | Kajá ki chúga |
| How high | Kayá wánge | Bisí júre | Ichun shán-gum | Dai gúm hoo lao [lao | Kirke ki chúga |
| How deep | Kaya loobage | Bisi thú bi | Ichunthoo um | Dai gum choog | Kasú ki chúga |
| How far | Kaya Lábe [bage | Bisi chaim ba | Ichun ghum [lum | Dai gum teo lao [lao | Kacha ki chuga [wa |
| How was it | Kurum don | Bide zákha | I'tí hum | Dai dou sha | Kaje bochi be |

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Ishem | Angár | New and old K. |
| Nar khook | .... | Man. new and old K. |
| Voi sun | Khipé | Cach and Meekir. New and old K. |
| Sé ek | Joi go bang | |
| Khoboor | Shoom jám | All except Cach. and Meekir. |
| Rong in rook | Doi oi | Man. and new K. |
| Hong koire | Jong héterám | Man. new and old K. |
| Enro | Láng not | Ditto. |
| Vadong ro | Arjú non | New and old K. |
| Tong bút | Thák not | Ditto. |
| Lhung rei | Rák nón | Man. Gna. Ar. |
| Shúdro | Pri non | |
| Numro | Ing ním non | Mon. new and old K. |
| Kei kafe. | Nge dám lo | Ditto. |
| Nung Nafé | Nung | |
| Khú afe | Nang | |
| Keimani kafe | Ngetum | |
| Nunmani nafe | Nungtúm | |
| Khú mani afe | Nang túm | |
| Kei kafe ták | Nge tá tún lo | |
| Kei fénke | Nge dam po | |
| Kei kafé mak | Nge dám te lo | |
| Kei kafe tamak | Nge dám de láng | |
| Kei fenóning | Nge dám te lo | |
| Kei kafe nóm | Nge dám toong ong | |
| Kei kafe thei | Nge dám oon | |
| Kei kafén tháng iti | Nged ám oonte mélo | |
| Kei lei fe sáro | Nge dám po ne pinot | |
| Nung fétero | Nung dam | |
| Nung fénoro | Dám ri [not | |
| Kei ni pero | Nge phán pí- | |
| Hituk ahin Húngro | Dákle váug | |
| Tongno ro | Doyoira do | |
| Choiu la féro | La po not | |
| Khóakha hung | Hala tava not | |
| Anit [laro | Hoi tema | Man. and Meekir Cach. and old K. |
| Ni muk | Kali | |
| Irhungimé | Kopi lo | |
| Inkunim | Kolo pú lung | |
| Ijáka | Ko láng do | |
| Itén kám alín | Kolo anthai ma | |
| Iten kám ari-sáng [thook | Kolo angi ding | |
| Iten kám án- | Koló arnuk ma | |
| Iten kan alhut | Kolo ánhilo | |
| Imani é | Pite pláng lo | |

| *English.* | *Manipoorie.* | *Cacharee.* | *New Kookie.* | *Aroong Naga.* | *Angami Naga.* |
|---|---|---|---|---|---|
| How are you | Kurum pali | Noo bide hé | Iti nahím | Dai gúm ham-dí she | No kidi bága |
| Thus | Asundowna | Eho lai | Hitín | Ai gúm | Hai kamá |
| Here | Asída | Erá há | Hia-Hikóma | Aliá , | Hucha |
| There | Asómda | Hou ra | Húa-Húkoma | Wímhé | Loocha |
| Where? | Kei da | Buráha | Hoya | Dainga | Ki chagá |
| Now | Huchik | Dúha | Túa-Toon | Chúna | Tche |
| Then | Asai | Monung ha | Hú phat | Wi jé | Kunó |
| When | Horén | Duhu | Ajou | Danaine | Kechi ki toga |
| When? | Kadóng nai | Bakháli | Ití a | Dai doune | Vo to ga |
| To-day | Ashi | Dini | Too ni | Anaimai | Te jú |
| To-morrow | Aráng | Miáha | Jíng le | Jinai pache | U'n dú |
| Yesterday | Hai yeng | Duknáha | Jíng | Jinai | So dú |
| To | Da | Kó | Á | A | Nú |
| From | Di gi | Ní | Á | Se | Nula |
| By | Na | Jáng | In | Ne | Pe |
| With | Loi nít na | Loogoo | Henga | Choo | Bo |
| In | Da | Ha | A | Ga | Nú |
| On | Thuk | Ha | A | Rei ga | Nú |
| Within | Yimúng | Bising ha | Shoong | Bolúnga | Ki nú |
| Without | Mapál | Baji ha | Po | Mákse | Ki ta |
| Between | Moyaida | Juj hera | A lai | Malúnga | Pomá chenú |
| Above | Mathuk | Busao | Chúng | Peréga | Keri kégi |
| Below | Makha | Bukh la | Tol-Noya | Kunáwa | Ker nó noo |
| And | Súng | Ar | Chile | Chaine | Di |
| Also | Ama súlei | Bo | Yong | De | Ri |
| Or | .... | Tí | Never used | .... | .... |
| Although | .... | Sakung ha | Ma | Kureiba | Thuzúno |
| But | Adoga | Dabo | Chú in | Chaine | Sá |
| If | Bacli | Mánangha | Ma | Indamei | Nole |
| Unless | Badi [khai | .... | Ahiváng in | Indamei | .... |
| Until | Adoo gi ma- | Da Nunga | Hú ti phat | Námei | Kamusa |
| Before | Mangda | Sa kung ha | Amusa | Rei lou | Lookí |
| Behind | Tungda | Ya hoong ha | Núnga | Na lou | Ussa |
| Aside | Nakul | Sakoi si | Apunga | Tunsuni | Loocha |
| Among | Moyai da | Besing ha | Kiká a | Buknka | Machono |

Notes.

Kh. and Gh. are not guttural in this language.

Kh. and Gh. invariably guttural. Their other sounds being unused.

The final U has the sound of the French E. in this language.

| *Old Kookie.* | *Meekir.* | *Remarks.* |
|---|---|---|
| Inkana úm-chem | Náng piti plang | |
| Hinkihin | Lapohi lo | New and old K. |
| Pe hin | Lagema | Ditto. |
| Hú a khoo | Hali | Cach. new and old K. |
| Ta kám | Koná holó | |
| Too | Non het lung | New and old K. |
| Atik | Chúnonda | |
| Anit le | Nonhe la | |
| Iti ghin im | Kumántoo | New and old K. |
| Atoo nim | Míni | Cach. new K. old K. and Meekir. |
| Took jíng | Pa tini | New K. Ar. and old K. |
| Von jíng | Minap | Man. new K. Ar. and old K. |
| A | a | New K. Ar. old K. and Meekir. |
| A | pén | New K. and old K. |
| In | pén | Man. and Ar. Gna. and Meekir new K. and old K. |
| Jénga | ri | New and old K. |
| A | e | Ditto. |
| A | a | Ditto and Meekir. |
| Shoong | Hémárlo | Man. new K. and old K. |
| Apooa | Angtán | New and old K. |
| A lai tuk | Angbong | Man. new and old K. |
| Chúnga | Athép | New and old K. |
| Atúl | Ahroom | Ditto. |
| Khun choo | Kúlapoo | |
| Khom | Yi | |
| .... | .... | |
| .... | Aphrung | |
| .... | Polo | |
| Ait nága | Mólo | |
| .... | .... | |
| Hi tik tukin | Mónonphi | |
| Amása | Ako | New and old K. and Man. |
| Núng ita | Aphi | Man. new and old K. |
| Ako la | Eplák | |
| Kinin kár | Arh lo | New and old K. |

In the verbs, the addition of "Kitti" is required to each to form the imperative.

*Abbreviations.*

Man. Manipoorie. *Gna.* Angamie Naga.
Cach. Cacháree.
New K. Thudon Kookie. *Mee.* Meekir.
Old K. Beteh Kookie. Hind. Hindustani.
Ar. Aroong Naga.

II.

*Abstract of Meteorological Observations taken at Apaloo in Northern Cachar, from the 18th June to October*, 1855.

Maximum height of Thermometer from 18th to the end of June.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 78° |
| 9 A. M. .. .. .. .. | 81 |
| Noon, .. .. .. .. | 82 |
| 3 P. M. .. .. .. .. | 82¼ |
| 6 P. M. .. .. .. .. | 82 |
| 9 P. M. .. .. .. .. | 80 |
| Average maximum,.. | 80.875° |

Average height of Thermometer from 18th to the end of June.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 74.61′ |
| 9 A. M. .. .. .. .. | 76.36 |
| Noon, .. .. .. .. | 77.69 |
| 3 P. M. .. .. .. .. | 79.07 |
| 6 P. M. .. .. .. .. | 77.52 |
| 9 P. M. .. .. .. .. | 75.98 |
| Total average,.. | 76.8716° |

Minimum height of Thermometer from 18th to end of June.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 72° |
| 9 A. M. .. .. .. .. | 73¼ |
| Noon, .. .. .. .. | 74½ |
| 3 P. M. .. .. .. .. | 76 |
| 6 P. M. .. .. .. .. | 74 |
| 9 P. M. .. .. .. .. | 72¾ |
| Average minimum,.. | 73.75° |

Register of rain fall, from 18th to the end of June, 1855.

| | |
|---|---|
| No. of rainy days,..... | 11 |
| No. of fair days,.. .. ..... | 2 |

| | |
|---|---|
| Total amount of rain, in inches, .. .. | 5.275 |
| Average per 24 hours, .. .. .. | 0.4057 |
| Average during rainy days, .. .. | 0.47954 |
| Maximum fall in 24 hours, .. .. | 1.675 |

Maximum height of Thermometer during July, 1855.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | $78\frac{1}{2}^{\circ}$ |
| 9 A. M. .. .. .. .. | 81 |
| Noon, .. .. .. .. | $84\frac{1}{2}$ |
| 3 P. M. .. .. .. .. | $84\frac{3}{4}$ |
| 6 P. M. .. .. .. .. | $83\frac{3}{4}$ |
| 9 P. M. .. .. .. .. | 80 |
| Average maximum,.. | 82.083° |

---

Average height of Thermometer during July, 1855.

| | |
|---|---|
| | ° ′ |
| At 6 A. M. .. .. .. .. | 76.129 |
| 9 A. M. .. .. .. .. | 78.371 |
| Noon, .. .. .. .. | 80.202 |
| 3 P. M. .. .. .. .. | 80.774 |
| 6 P. M. .. .. .. .. | 79.411 |
| 9 P. M. .. .. .. .. | 77.137 |
| Total average,.. | 78.6706° |

---

Minimum height of Thermometer during July, 1855.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 73° |
| 9 A. M. .. .. .. .. | 74 |
| Noon, .. .. .. .. | $75\frac{3}{4}$ |
| 3 P. M. .. .. .. .. | 72 |
| 6 P. M. .. .. .. .. | $75\frac{1}{2}$ |
| 9 P. M. .. .. .. .. | 74 |
| Average minimum,.. | 74.0416° |

---

Register of rain fall during July, 1855.

| | |
|---|---|
| No. of rainy days, .. .. .. .. .. | 23 |
| No. of fair days, .. .. .. .. .. .. | 8 |

| | |
|---|---|
| Total amount of rain, in inches, .. .. | 7.150 |
| Average per 24 hours, .. .. .. | 0.23064 |
| Average during rainy days, .. .. | 0.31086 |
| Maximum fall in 24 hours, .. .. | 1.725 |

Maximum height of Thermometer during August.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 78° |
| 9 A. M. .. .. .. .. | 80 |
| Noon, .. .. .. .. | 84¼ |
| 3 P. M. .. .. .. .. | 85 |
| 6 P. M. .. .. .. .. | 82½ |
| 9 P. M. .. .. .. .. | 79¾ |
| Average maximum, | 81.583° |

---

Average height of Thermometer during August.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 74°.766′ |
| 9 A. M. .. .. .. .. | 76.084 |
| Noon, .. .. .. .. | 78.298 |
| 3 P. M. .. .. .. .. | 78.847 |
| 6 P. M. .. .. .. .. | 77.411 |
| 9 P. M. .. .. .. .. | 76 |
| Total average,.. | 76.901° |

---

Minimum height of Thermometer during August.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 72° |
| 9 A. M. .. .. .. .. | 73 |
| Noon, .. .. .. | 73½ |
| 3 P. M. .. .. .. .. | 73½ |
| 6 P. M. .. .. .. .. | 73¼ |
| 9 P. M. .. .. .. .. | 72 |
| Average minimum,.. | 72.875° |

---

Register of rain fall during August, 1855.

| | |
|---|---|
| No. of rainy days,..... | 25 |
| No. of fair days, ..... | 6 |

| | |
|---|---|
| Total amount of rain, in inches, .. .. | 14.050 |
| Average per 24 hours, .. .. .. | 0.453266 |
| Average during rainy days, .. .. | .56 |
| Maximum fall in 24 hours, .. .. | 2.5 |

Maximum height of Thermometer during September.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 77° |
| 9 A. M. .. .. .. .. | 78½ |
| Noon, .. .. .. .. | 81½ |
| 3 P. M. .. .. .. .. | 82 |
| 6 P. M. .. .. .. .. | 80¾ |
| 9 P. M. .. .. .. .. | 78 |
| Average maximum,.. | 79.625° |

---

Average height of Thermometer during September.

| | |
|---|---|
| At 6. A. M. .. .. .. .. | 73.691° |
| 9 A. M. .. .. .. .. | 75.891 |
| Noon, .. .. .. .. | 78.033 |
| 3 P. M. .. .. .. .. | 78.741 |
| 6 P. M. .. .. .. .. | 77.258 |
| 9 P. M. .. .. .. .. | 75.041 |
| Total average,.. | 76.4425° |

---

Minimum height of Thermometer during September.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 70¾° |
| 9 A. M. .. .. .. .. | 72 |
| Noon, .. .. .. .. | 72¾ |
| 3 P. M. .. .. .. .. | 72 |
| 6 P. M. .. .. .. .. | 72 |
| 9 P. M. .. .. .. .. | 72½ |
| Average minimum, . | 72° |

---

Register of rain fall during September, 1855.

| | |
|---|---|
| No. of rainy days,... ..... | 16 |
| No. of fair days,..... | 14 |
| Total amount of rain, in inches, .. .. | 6.875 |
| Average per 24 hours, .. .. .. | 0.22916 |
| Average during rainy days, .. .. | 0.42968 |
| Maximum in 24 hours, .. .. .. | 0.975 |

Maximum height of Thermometer from 1st to 10th October.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 73¼° |
| 9 A. M. .. .. .. .. | 74½ |
| Noon, .. .. .. .. | 77¾ |
| 3 P. M. .. .. .. .. | 78¾ |
| 6 P. M. .. .. .. .. | 78 |
| 9 P. M. .. .. .. .. | 76 |
| Average maximum, .. | 76.375° |

---

Average height of Thermometer from 1st to 10th October.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 71.425′° |
| 9 A. M. .. .. .. .. | 72.85 |
| Noon, .. .. .. .. | 74.85 |
| 3 P. M. .. .. .. .. | 75.45 |
| 6 P. M. .. .. .. .. | 75. |
| 9 P. M. .. .. .. .. | 72.8 |
| Total average,.. | 74.7425° |

---

Minimum height of Thermometer from 1st to 10th October.

| | |
|---|---|
| At 6 A. M. .. .. .. .. | 68¼° |
| 9 A. M. .. .. .. .. | 68¾ |
| Noon, .. .. .. .. | 69 |
| 3 P. M. .. .. .. .. | 69¼ |
| 6 P. M. .. .. .. .. | 71¾ |
| 9 P. M. .. .. .. .. | 70¼ |
| Average minimum,.. | 69.5416° |

---

Register of rain fall from 1st to 10th October, 1855.

| | |
|---|---|
| No. of rainy days, ..... | 5 |
| No. of fair days, ..... | 5 |
| Total amount of rain, in inches, .. .. | 4.9 |
| Average per 24 hours, .. .. .. | 0.49 |
| Average during rainy days, .. .. | 0.98 |
| Maximum fall in 24 hours, .. .. | 1.8 |

Maximum average of Thermometer from 18th June to 10th Oct. 1855.

| | | | |
|---|---|---|---|
| During June,.. | .. | .. | 80.875° |
| July,.. | .. | .. | 82.083 |
| August, | .. | .. | 81.583 |
| September, | .. | .. | 79.625 |
| October, | .. | .. | 76.375 |

Maximum average, . 80° 1082′

---

Total average of Thermometer from 18th June to 10th October, 1855.

| | | | |
|---|---|---|---|
| During June,.. | .. | .. | 76.8716° |
| July,.. | .. | .. | 78.6706 |
| August, | .. | .. | 76.901 |
| September, | .. | .. | 76.4425 |
| October, | .. | .. | 74.7425 |

Total average 76.72565°

---

Minimum average of Thermometer from 18th June to 10th Oct.

| | | | |
|---|---|---|---|
| During June, . | .. | .. | 73.75° |
| July,.. | .. | .. | 74.0416 |
| August, | .. | .. | 72.875 |
| September, | .. | .. | 72. |
| October, | .. | .. | 69.5416 |

Minimum average,.. 72.44165°

---

Register of rain fall from 18th June to 10th October.

| | |
|---|---|
| No. of rainy days, ..... | 80 |
| No. of fair days, .. .. .. .. .. .. .. .. | 35 |
| Total amount of rain, in inches, .. .. | 38.25 |
| Average per 24 hours, .. .. .. | 0.315217 |
| Average during rainy days, .. .. | 0.478124 |
| Maximum fall in 24 hours, .. .. | 2.5 |
| Average maximum fall in 24 hours, .. .. | 1.735 |

*Notes on the foregoing Observations.*

The instruments, by means of which these observations were taken, being very imperfect ones, it is necessary to give some account of them, in order to show how far the Register may be relied upon.

The *Thermometer* used, was a small one made by R. Field and Son, rising to beyond boiling point of water and graduated to two degrees only. Experience in reading however, easily enabled any one to ascertain the height to a quarter of a degree.

The Thermometer was hung on the eastern wall of an eastern room, sixteen feet square, in a mat house. The wall consisted of a double set of coarse bamboo mats, six inches apart, the interstice being left vacant. The Thermometer did not touch the wall, but stood three inches out.

The room had two small windows facing the east, one of which was left open night and day; on the north and south were doors leading into verandahs, and on the west to other rooms. No fire was ever lighted in the room.

The *Pluviometer* consisted merely of a hollow tin cylinder, two and a half feet long, and four and a half inches in diameter.

This was placed in a wooden frame, on a level piece of ground, beyond the influence of houses or trees, at right angles to the earth. The contents were measured every morning at 9 A. M. by means of a foot rule graduated to twentieths of an inch, the depth of water being easily ascertainable to the fortieth of an inch. The mean of seven measurements was taken to establish each day's fall.

Once a week the Pluviometer was tested, to prove that it remained water-tight, this was done by filling it with water and enveloping it in a sheet of blotting paper—a slight saturation of the paper, after an hour's trial, on one occasion, showed that a leak existed, but it was immediately repaired.

No calculation has been made in this register for the evaporation of water from the instrument, and considerable quantities must have so disappeared, as rain has generally fallen in slight showers, succeeded by hot sunshine.

The present season is considered a remarkably dry one as far as it has gone, but the drought has not affected either the spontaneous

vegetation or the cultivation in the district, both of which are luxuriant; I cannot, therefore, think that there has been any great deficiency in moisture.

Apaloo is situated on the spur of a hill on the northern face of an extensive range of mountains, called the Burrail, running east and west between the rivers Brahmaputra and Soorma. Three attempts at approximating to the height, by ascertaining the boiling point of water, give the following results:—

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1st | Temp. of air | 80°. | Boiling point | 209°. | Height | 1687 | feet. |
| 2nd | ditto | 84 | ditto | $208\frac{3}{4}$ | ditto | 1836 | ditto. |
| 3rd | ditto | 77 | ditto | $209\frac{1}{4}$ | ditto | 1537 | ditto. |

the mean of which is 1686 feet.

The spur, on which the station is built, runs down from a large hill towering some thousand feet immediately above the place to the S. E. On the S. W. rises a large mountain some 5000 feet in height, and distant only about three or four miles from Apaloo. Between these two mountains, and (to within a degree) directly south of the station lies a gorge, or valley, the crown or head of which is 2376 feet above the level of the sea, and through which, the prevailing wind precipitates itself on the station. The direction of the wind, however, from the local circumstance of the ridge above Apaloo presenting itself as a barrier, is not as might be supposed due south, but almost exactly S. E., the superior ridge having the effect of turning the current in an easterly direction.

Due east there is another gorge between the Apaloo mountain, and the one adjacent to it on the north; through this however, the winds are infrequent. The site of Apaloo overlooks the northern and western sides, the winds from those directions are therefore not acted upon by any local agency.

In this register, I have given *seven* places of force to the wind, and as I had no other means of determining these, otherwise than by the resistance of my own person, and neighbouring objects, I preferred naming them by terms significant in themselves, rather than by employing numbers, which would require experience to be properly appreciated.

Calm.

The seven places are as follows—
1. Very slight.
2. Slight.
3. Stiff.
4. Hard.
5. Very hard.
6. Stormy.
7. Hurricane.

The first ranges from the slightest motion in the air, to about that degree of force required to raise a flag to about an angle of 45° with the staff.

The second continues from that, until the flag flies parallel to the earth.

The wind is "stiff," when it offers material resistance to proceeding against it. "Hard" when the trees bend and groan under it. "Very hard" when green leaves are stripped off the trees, and all light articles on the ground are whirled up in the air. "Stormy" when branches are torn from the trees, and these themselves, when with no depth of root, prostrated. And a "hurricane" there can be no mistaking.

In observing the clouds, I have only written down the predominating form of cloud visible at the time.

When "nimbus" is recorded, it was positively raining at the time of observation.

R. Stewart.

*Apaloo, N. Cachar, 11th October*, 1855.

## III.

*Measurements of some of the tribes Inhabiting the hills on the Eastern frontier of Bengal.*

### Note.

The following measurements of the tribes were commenced with an idea, that they might be useful in determining the affinity of the various clans. Independently however of its being a laborious and unpleasant occupation, the work was arrested by an opinion having got abroad among the people that such close research was connected with an unholy purpose, and nothing could dissuade them from this absurd belief.—One or two of those last measured, being covered to undergo the operation, evinced the greatest trepidation during the process, and not even the bribe of 4 annas per man, offered to likely subjects, could induce them to come forward, they avering that they would be obliged to spend four times that sum, afterwards, in sacrifices, to avert the evil that might accrue to them—with the single exception of the old Kookie, however, in these measurements, the others are very fair average types of their respective tribes.—The former is a very small specimen, and but poorly represents his family.

R. Stewart.

*Tables showing the measurements of the bodies, and limbs of average sized stating their supposed ages and noting any*

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | Hip joint to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round the forehead. | Round forehead and ears. | Necks. | Shoulders. | Chest | Waist. | Hips. |
| Thadon. New Kookie village. | Shémhow male. | 25 | 5 | $3\frac{1}{4}$ | $19\frac{1}{2}$ | 18 | $29\frac{1}{4}$ | 14 | 17 | $21\frac{1}{4}$ | 21 | $12\frac{1}{4}$ | $37\frac{1}{2}$ | $30\frac{1}{2}$ | $24\frac{1}{2}$ | 33 |
| Thadon. New Kookie village Jámpi. | Shóngut male. | 38 | 5 | $4\frac{3}{4}$ | 16 | $19\frac{1}{2}$ | 30 | $13\frac{1}{2}$ | $18\frac{1}{4}$ | $22\frac{1}{2}$ | $21\frac{3}{4}$ | 13 | 40 | $32\frac{1}{2}$ | 28 | $32\frac{1}{4}$ |
| Shingshón. New Kookie village. | Kóbhé Tung male. | 22 | 5 | 0 | $17\frac{1}{2}$ | 17 | $28\frac{3}{4}$ | $13\frac{1}{2}$ | 17 | $21\frac{3}{4}$ | $21\frac{1}{2}$ | $12\frac{1}{4}$ | $38\frac{1}{2}$ | $31\frac{1}{2}$ | 26 | 34 |

*men of the different tribes inhabiting the Eastern Frontier of Bengal, marked peculiarity of person or features.*

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| 18½ | 13½ | 9¼ | 9 | 5½ | 7¾ | 6 | 9½ | 3¾ | Complexion fair. Hair black and long. Forehead high and broad, but retreating very much. Eyebrows scanty. Eyes dark, small, almond-shaped, and not sunk in sockets. Nose long and prominent, nostrils small. Cheek-bones high, broad and prominent. Mouth small. Lips large and protruding. Teeth complete, slightly irregular and covered with tartar. A few hairs on upper lip and chin. Chin round and retreating. Ears small—bored large enough to admit a pencil. Face egg-shaped. |
| 18 | 13¾ | 9 | 8¼ | 6 | 8½ | 5¾ | 9¾ | 3¾ | Complexion dark. Hair black, fine, long and scanty. Forehead round. Eyebrows well marked. Eyes dark, small, almond-shaped, and not sunk deep in sockets. Nose and nostrils large, but not flat. Cheek-bones not prominent. Mouth large, upper lip long and compressed, under lip large and protruding. Teeth complete, irregular and dirty. No hair on face. Chin round, ears large, with bore sufficient to admit a pencil. Face egg-shaped. |
| 18½ | 13 | 8½ | 8½ | 5¾ | 8 | 5¼ | 9¾ | 4 | Complexion fair. Hair dark and long. Forehead high and broad, but retreating. Eyebrows well marked. Eyes small, black, almond-shaped and not retreating. Nose large, flat and broad. Nostrils wide. Cheek-bones high, broad and prominent. Mouth large. Lips large, red, and protruding. Teeth regular, complete and covered with tartar. No hair on face. Chin large and square. Ears *and bored large enough to admit a pencil. Face nearly oval. |

* Blank in MS.

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | From hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round forehead. | Round forehead and ears | Neck. | Shoulders. | Chest. | Waist. | Hips. |
| Shíngshón. New Kookie village. | Kimja male. | 30 | 5 | 1½ | 19 | 17¾ | 28½ | 13 | 18¼ | 21¼ | 21¼ | 12¾ | 40½ | 32¼ | 26½ | 33¼ |
| Shíngshón. New Kookie village Jampi. | Léo Thung male. | 23 | 5 | 3 | 20 | 18 | 28¾ | 13¼ | 17¼ | 22¼ | 22 | 12¼ | 39½ | 31¼ | 25¾ | 32 |
| Chángsén. New Kookie village. | Loonjapou male | 35 | 5 | 3 | 16½ | 17¾ | 28 | 13 | 18 | 21½ | 20¾ | 13 | 40 | 33½ | 28½ | 33½ |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| 20 | 13¾ | 10¼ | 9 | 6 | 7¾ | 6 | 10 | 3½ | Complexion dark. Hair black, long, and rather fine. Forehead straight, narrow and low. Eyebrows irregular and scanty. Eyes black and almond-shaped. Nose small, but broad and flat. Cheek-bones very prominent, broad and high. Mouth small, lips small, but protruding. Teeth complete, slightly irregular and very dirty. A few black bristles on upper lip and chin. Chin small, round and retreating. Ears small, bored with a hole large enough to admit forefinger. Face almost diamond-shaped. |
| 18 | 12¼ | 8¾ | 8¼ | 5¼ | 7½ | 6 | 9 | 3¾ | Complexion rather dark. Hair black, long and fine. Forehead high and round. Eyebrows well marked and shaggy. Eyes large, almond-shaped and dark. Nose small, but broad, and nostrils wide. Cheek-bones high, and very broad. The entire face, by reason of them, being nearly as broad as long. Mouth small, lips small and well shaped. Teeth complete and regular, slightly covered with tartar. No hair on face. Chin pointed. Ears small, and very slightly bored. Face almost round with the exception of the angular chin. Head altogether large for the body. |
| 18¾ | 13¼ | 10 | 10 | 6 | 8¼ | 5½ | 10 | 4¼ | Complexion fair Hair black and long. Eyebrows scanty. Forehead high and broad, but retreating very much. Eyes small, almond-shaped, dark, and not sunken but almost on the surface of the face. Nose long and prominent. Nostrils small. Cheek-bones high, broad and prominent. Mouth small, lips large and protruding. Teeth complete slightly irregular and dirty. A few hairs on upper lip and chin. Chin round and retreating. Ears naturally large and made more so by being bored—hole 1 inch in diameter. Face triangular. |

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | | Measurements of | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | | Head. | | Body. | | | |
| | | | Feet. | Inches. | From hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round forehead. | Round forehead and ears. | Neck. | Shoulders. | Chest. | Waist. | Hips. |
| Meekir, village Lángpher. Jánbiso male. | | 38 | 5 | $5\frac{1}{4}$ | 21 | $18\frac{1}{2}$ | 32 | $12\frac{1}{2}$ | 19 | $21\frac{1}{2}$ | $20\frac{1}{2}$ | $12\frac{1}{2}$ | $38\frac{1}{4}$ | 31 | $24\frac{1}{4}$ | $32\frac{1}{2}$ |
| Meekirs, village Thapundisa. Jorbása male. | | 37 | 5 | $4\frac{3}{4}$ | 19 | $18\frac{1}{4}$ | $30\frac{1}{4}$ | 13 | $16\frac{3}{4}$ | $21\frac{1}{4}$ | $21\frac{1}{4}$ | 13 | $40\frac{1}{2}$ | 34 | 26 | $32\frac{3}{4}$ |
| Lhungúm New Kookie, village Koongpi. Khooplou male. | | 28 | 5 | 4 | 19 | $18\frac{3}{4}$ | 30 | 13 | $17\frac{1}{4}$ | $22\frac{1}{4}$ | $21\frac{1}{4}$ | $12\frac{1}{2}$ | 40 | $32\frac{1}{4}$ | $27\frac{1}{2}$ | $32\frac{1}{4}$ |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Waist. | Length. | Breadth. | Length. | Breadth. | |
| 18 | 13¼ | 8¾ | 8¾ | 5¼ | 8 | 5¾ | 9½ | 3½ | Complexion dark. Hair black. Forehead retreating. Eyebrows scanty. Eye dark, being blind of the other from small-pox and not sunk far into the head. Nose large and broad. Nostrils wide. Check-bones high but narrow. Mouth large. Lips protruding but small. A few bristles on upper lip and chin. Chin retreating. Ears large and bored ½ inch in diameter. Face pear-shaped. |
| 18¼ | 13½ | 9½ | 9 | 5¾ | 7¾ | 5½ | 10¼ | 4 | Complexion dark. Hair shaved with the exception of a tuft on scalp, black and coarse. Forehead narrow and retreating. Eyebrows shaggy. Eyes large, almond-shaped, and dark. Nose snubbed, very large and broad. Nostrils very wide. Cheek-bones high. Mouth very large. Lips very broad. Teeth black, regular and complete. A black moustache with long hair, though scanty, no hair on cheek or chin. Chin large and retreating. A swelling on the left side of neck (cause unknown) about the size of a large marble. Ears small and slightly bored. Face square. |
| 17 | 12¾ | 8¾ | 8¾ | 5½ | 7½ | 5 | 10¾ | 3¼ | Complexion fair. Hair shaved, with the exception of a tuft on scalp, black and coarse. Forehead narrow, low and retreating. Eyebrows scanty. Eyes large, dark, almond-shaped. Nose long. Nostrils large. Cheek-bones high but not broad. Teeth black, irregular and incomplete. Moustache short black, hair very scanty. No whiskers or beard. Chin large and square. Ears large, and bored large enough to admit forefinger. |

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | Hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round forehead. | Round forehead and ears. | Neck. | Shoulders. | Chest. | Waist. | Hips. |
| Meekir, Thaipún disa village. | Sármoo male. | 25 | 5 | $8\frac{1}{2}$ | 21 | $19\frac{1}{4}$ | $32\frac{3}{4}$ | 13 | $17\frac{1}{2}$ | $21\frac{1}{4}$ | $20\frac{1}{2}$ | $11\frac{3}{4}$ | $36\frac{1}{2}$ | $29\frac{1}{2}$ | $23\frac{3}{4}$ | 31 |
| Meekir, Thaipún disa. | Sárkro male. | 27 | 5 | $4\frac{1}{4}$ | $19\frac{1}{2}$ | $18\frac{1}{2}$ | $29\frac{3}{4}$ | 14 | $18\frac{1}{4}$ | $20\frac{1}{2}$ | 20 | $11\frac{3}{4}$ | 39 | $32\frac{1}{2}$ | 25 | 33 |
| Beten Old Kooie, village Bólmól. | Haichóngmún male. | 20 | 5 | $0\frac{3}{4}$ | 18 | 16 | 29 | 12 | 17 | 22 | $21\frac{1}{4}$ | $11\frac{1}{2}$ | 43 | $33\frac{1}{4}$ | 26 | 33 |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| 17 | 12½ | 8 | 8 | 5½ | 6½ | 5 | 10½ | 3¼ | Complexion fair. Hair shaved in front and at sides, black, long and coarse in the centre of the head. Forehead very low indeed, narrow, and perpendicular. Eyebrows scanty. Eyes large, round, dark. Nose large. Nostrils small. Cheek-bones high and prominent. Mouth large, lips protruding. Teeth regular, complete and dirty. No hair on face. Chin round. Ear large, and bored large enough to admit little finger. |
| 17 | 13 | 9¼ | 8¾ | 5½ | 7 | 5 | 10 | 3½ | Complexion fair. Hair shaved all round the head, leaving a large tuft in centre—coarse and black. Forehead low, narrow, round. Eyebrows scanty and shaggy. Eyes dark, small, almond-shaped. Nose short and broad. Nostrils wide. Cheek-bones high and narrow. Mouth large, lips small. Teeth black, regular, complete. Chin long, square. A few hairs as moustache. Ears slightly bored, face square. |
| 18 | 13 | 9¼ | 8½ | 5½ | 7½ | 5½ | 9 | 3½ | Complexion dark. Hair black, coarse, cut short and erect in front. Eyes full-sized, dark, almond-shaped and not sunk much into the head. Eyebrows well marked. Forehead low and retreating. Nose small and flat. Cheek-bones very broad and prominent though not high. Mouth small, upper lip protruding, though small. Under lip broad. Teeth complete, regular and slightly covered with tartar. No hair on face. Chin small and square. Ears very large and bored with a hole an inch in diameter. Face rectangular. |

| Tribe and Residence, | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | Hip joint to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round the forehead. | Round forehead and ears. | Necks. | Shoulders. | Chest | Waist. | Hips. |
| Angamie Naga, Joyshema. | Kreboomiye male. | 27 | 5 | $6\frac{1}{2}$ | $18\frac{1}{2}$ | 18 | $30\frac{1}{4}$ | 13 | $18\frac{1}{4}$ | 21 | 20 | $11\frac{3}{4}$ | 38 | $32\frac{1}{4}$ | 28 | 34 |
| Angamie Naga, Konomah. | Chelwêle male. | 25 | 5 | $6\frac{1}{2}$ | 21 | $17\frac{1}{4}$ | 31 | 13 | $17\frac{1}{2}$ | $21\frac{3}{4}$ | $20\frac{1}{2}$ | $13\frac{1}{4}$ | 41 | 34 | 31 | $35\frac{1}{2}$ |
| Angami Naga, Mosamah. | Wijehoo male. | 30 | 5 | 9 | 20 | $20\frac{1}{2}$ | 31 | 14 | $18\frac{1}{2}$ | $22\frac{3}{4}$ | 22 | $14\frac{1}{2}$ | $43\frac{1}{2}$ | $36\frac{1}{2}$ | $30\frac{1}{2}$ | $34\frac{3}{4}$ |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| 18½ | 13¼ | 9¼ | 8¾ | 5½ | 7½ | 5¼ | 9 | 3¼ | Complexion dark. Hair black, coarse, short. Forehead high, narrow, and retreating. Eyebrows faintly marked. Eyes almond-shaped, dark, and prominent. Nose well-shaped, Cheek bones high and broad, mouth large, lips prominent, teeth irregular, clear and complete. No hair on cheek, chin or lips. Chin round. Ears small, and bored with three small holes in each. Face triangular. A mole on right cheek. |
| 19¾ | 14¾ | 10¼ | 9¼ | 5¾ | 7 | 5½ | 9¼ | 3½ | Complexion fair. Hair black, long, and coarse. Forehead low, narrow, straight, and wrinkled. Eyebrows thick and shaggy, slanting upwards from the bridge. Eyes dark, round, and prominent, with the outward corners turned up. Nose broad and prominent, ending in a round nob. Cheek bones very broad. Mouth small, lips small, teeth white, complete and irregular. No hair on face. Chin round. Ears small, bored with 3 holes in each. Face square. Shoulders slanting. |
| 20½ | 15¼ | 10¾ | 9¾ | 6¼ | 7¼ | 6 | 10½ | 3½ | Complexion dark. Hair black, coarse, short. Forehead broad, low, straight. Eyebrows scanty. Eyes dark. Nose broad. Nostrils wide. Cheek bones very broad and prominent. Mouth large, lips large and broad. Chin large and round. A few hairs on lips and chin. Ears large, the lower lobe joined on to the cheek, and bored with three small holes. Face very broad and square. |

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | Hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round forehead. | Round forehead and ears. | Neck. | Shoulders. | Chest. | Wrist. | Hips. |
| Aroong Naga, village Gurrilo. | Toulé Kumba, male. | 23 | 5 | 4 | 19 | 18½ | 28 | 13¼ | 18 | 21½ | 21 | 12 | 38 | 31 | 24¾ | 30½ |
| Aroong Naga, village Apáloo. | Sontiyung, male. | 19 | 5 | 2½ | 18½ | 18 | 29 | 12½ | 17 | 21½ | 20¾ | 12 | 38 | 31 | 24½ | 30 |
| Aroong Naga, village Chenum. | Hénoun, male. | 24 | 5 | 2¾ | 19½ | 18¾ | 31 | 12 | 17 | 21 | 20 | 12 | 38 | 31½ | 23½ | 29½ |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Leg. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| $15\frac{1}{2}$ | $12\frac{1}{4}$ | $8\frac{1}{2}$ | $8\frac{3}{4}$ | $5\frac{3}{4}$ | 8 | 5 | $9\frac{1}{4}$ | $3\frac{1}{2}$ | Complexion fair. Hair black, cut short, and erect in front. Eyebrows well marked. Forehead narrow and low, but not retreating. Eyes small, dark, almond-shaped, and not sunk far into the head. Nose small and well-shaped. Cheek-bones narrow, high, but not prominent. Mouth small, upper lip long, both prominent but not large. Teeth regular, complete and clean. No hair on face. Chin round and retreating. Ears large and bored large enough to admit a pencil. Face oval, large protuberance at navel. |
| $17\frac{1}{2}$ | $12\frac{1}{2}$ | 8 | 9 | 6 | 8 | 5 | $10\frac{1}{4}$ | $5\frac{1}{2}$ | Complexion fair. Hair black, coarse, short and erect in front. Forehead low, broad and round. Eyebrows well marked. Eyes large, almond-shaped and almost on the surface of the countenance. Nose flat. Cheek-bones narrow but high. Mouth small. Lips protruding. Teeth complete, irregular and dirty. No hair in the way of beard, whiskers, or moustaches. Chin round and retreating. Ears small, bored, large enough to admit a pencil. Face egg-shaped. Large hands and feet, and stooping shoulders. |
| 17 | $11\frac{1}{2}$ | $8\frac{1}{4}$ | $8\frac{3}{4}$ | $5\frac{1}{4}$ | 7 | $5\frac{1}{2}$ | $9\frac{1}{2}$ | $3\frac{1}{2}$ | Complexion fair. Hair black and short. Forehead high and perpendicular, but narrow. Eyebrows faintly marked. Eyes small, dark, almond-shaped, with the outward corners very much turned up and not sunk far into the head. Nose small, but broad and flat, nostrils wide. Cheek-bones high. Mouth large. Lips broad and protruding. Teeth complete, regular and of a yellow colour throughout. No hair on face. Chin square. Ears small and bored, large enough to admit a pencil. Face pear-shaped. |

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | | Measurement, of | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | | Head. | | Body. | | | |
| | | | Feet. | Inches. | Hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | | Horizontally round forehead. | Round forehead and ears. | Neck. | Shoulders. | Chest. | Waist. | Hips. |
| Aroong Naga, village Apaloo. | Housi Kumba, male. | 20 | 5 | $3\frac{1}{2}$ | $19\frac{1}{4}$ | $18\frac{1}{4}$ | $28\frac{3}{4}$ | $13\frac{1}{2}$ | 17 | | 21 | $20\frac{1}{2}$ | $12\frac{1}{4}$ | $38\frac{1}{2}$ | $31\frac{1}{4}$ | $24\frac{1}{4}$ | $31\frac{1}{4}$ |
| Aroong Naga, village Apaloo. | Rungkou wai, male. | 23 | 5 | 5 | $19\frac{3}{4}$ | $17\frac{1}{2}$ | $30\frac{1}{2}$ | $13\frac{1}{2}$ | 17 | | 21 | 20 | $12\frac{1}{2}$ | $38\frac{1}{4}$ | $31\frac{1}{2}$ | 25 | $31\frac{1}{2}$ |
| Manipoorie. | Putter Sing, male. | 27 | 5 | $7\frac{3}{4}$ | 21 | 18 | $32\frac{1}{2}$ | $13\frac{1}{4}$ | 19 | | $22\frac{1}{4}$ | $21\frac{3}{4}$ | $12\frac{3}{4}$ | $41\frac{1}{4}$ | $34\frac{3}{4}$ | 26 | 34 |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| 18 | 13¼ | 9½ | 9½ | 6 | 7½ | 5¼ | 9½ | 3½ | Complexion fair. Hair black, stiff, coarse, cut short and erect in front. Forehead high, broad, and perpendicular. Eyebrows scanty. Eyes black, almond-shaped and turned up at the outward corners. Nose small but flat. Cheek-bones high but not broad. Mouth large. Lips broad. Teeth clean, complete, but irregular. No beard or moustache. Chin large and square. Ears small and bored, large enough to admit a pencil. Face oval. |
| 17 | 13½ | 8¼ | 9½ | 5¾ | 7 | 5½ | 9½ | 3¾ | Complexion fair. Hair black, stiff, coarse, cut short and erect in front. Forehead low, narrow, but perpendicular. Eyebrows well marked. Eyes small, almond-shaped, and almost on the surface of the countenance. Nose large and broad, but not flat. Nostrils wide. Cheek-bones large and high. Mouth small, lips small but protruding. Teeth clean, complete, but slightly irregular. An incipient moustache, but no whiskers or beard. Chin square. Ears small and bored, large enough to admit a pencil. Face pear-shaped. |
| 19¾ | 13¼ | 10¾ | 10 | 6¼ | 8 | 5 | 9½ | 3¾ | Complexion fair. Hair black, long, fine, and inclined to curl. Forehead high, narrow, and retreating. Eyebrows well marked, arched and sloping up outwards. Eyes large, dark and almond-shaped. Nose large, nostrils wide. Cheek-bones high and prominent. Mouth large, lips very broad and large. Teeth complete, regular and dirty. Long brown moustache, but no whiskers or beard. Chin round. Ear small and bored, with a small hole. Face very long, shaped oblong. Body covered with a few scanty hairs.<br>N. B.—Beyond the moustache the Manipoories have little or no hair on the face in 9 cases out of 10. |

| Tribe and Residence. | Name and Sex. | Supposed Age. | Measurements of Length. | | | | | | | Measurements of | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Entire Height. | | Legs. | | | Arms. | | Head. | | Body. | | | | |
| | | | Feet. | Inches. | Hip to knee. | Knee to sole. | Fork to sole. | Shoulder to elbow. | Elbow to tip of middle finger. | Horizontally round forehead. | Round forehead and ears. | Neck. | Shoulders. | Chest. | Waist. | Hips. |
| Cacháree, Semkur. | Raituween, male. | 35 | 5 | $6\frac{1}{4}$ | $19\frac{1}{2}$ | 18 | 32 | 13 | $17\frac{1}{4}$ | $22\frac{1}{2}$ | $21\frac{1}{2}$ | $12\frac{1}{2}$ | $40\frac{1}{2}$ | 33 | $25\frac{3}{4}$ | 32 |

| Girth. | | | | | Face. | | Foot. | | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Legs. | | Arms. | | | | | | | |
| Thigh. | Calf. | Upper arm. | Lower arm. | Wrist. | Length. | Breadth. | Length. | Breadth. | |
| $19\frac{1}{2}$ | $13\frac{1}{4}$ | $9\frac{1}{4}$ | 9 | $5\frac{3}{4}$ | 7 | 5 | $9\frac{3}{4}$ | $3\frac{1}{2}$ | Complexion dark. Hair black, coarse, coming down to a peak on the forehead naturally, shaven in front, but long behind. Forehead narrow, low and retreating, slightly wrinkled. Eyebrows very prominent, abundant and shaggy, almost meeting over bridge. Eyes large and dark, the whiter being almost yellow. Nose large, nostrils wide. Cheeks sunken, bones being high and prominent. Mouth and lips large. Teeth irregular, complete and yellow. Thick hair about an inch in length, growing plentifully on cheek, chin and lips of black colour, but sprinkled with a few grey, as is also the hair of the head. Chin round. Ears large and bored, large enough to admit forefinger. Face long and oval.<br><br>N. B.—The Cacharies generally are without hair on the face. |

PROCEEDINGS

OF THE

# ASIATIC SOCIETY OF BENGAL,

For October, 1855.

At a monthly general meeting of the Society held on the 3rd inst. at the usual hour.

Bábu Rámgopál Ghose, Vice-President in the chair.

The minutes of the last month's proceedings were read and confirmed.

Presentations were received—

1. From J. Peel, Esq. Acting Principal of the Grant Medical College. A copy of the report of the College for the session 1854-5.

2. From N. Shaw, Esq. Secretary to the Royal Geographical Society of London. The 24th volume of the Society's Journal.

3. From Mons. C. Holst, Secretary to the University of Christiania. The latest publications of the University.

4. From L. Ingels, Esq. Two pairs of hempenshoes obtained at the village of Dungshani in the Kulu Range, and a specimen of iron ore from the Kotkae mines, Himalaya.

The following gentlemen were named for ballot at the next meeting.

J. P. Legeyt, Esq. proposed by Mr. Allen and seconded by the chairman.

J. Middleton, Esq. (for re-election) proposed by Mr. Allen and seconded by Mr. Bayley.

The chairman read to the meeting the following letter from Mr. Grote.

Sir,—I have the honor to acknowledge your letter of the 12th inst. giving cover to a resolution adopted by the Asiatic Society at their last ordinary general meeting, and recommending it to my earnest consideration.

The purport of the resolution is a gratifying proof to me of my not having laboured in vain in the honorable office to which the Society elected me now nearly three years ago, and under other circumstances I could scarcely hesitate to comply with an invitation at once so cordial and so flattering.

But the step which I have taken was a deliberate one, to which, with the greatest deference to the wishes of the Society, I must beg its permission to adhere.

I have, &c.

*Calcutta, Sept. 15th,* 1855. (Signed) A. Grote.

He then proposed that "this meeting receives with regret the resignation of Mr. Grote as Secretary of the Society and Editor of the Journal, and desires to record its grateful sense of the distinguished zeal and ability with which he has so long discharged the arduous duties of his office."

The motion having been seconded by Capt. Thuillier, was carried.

Communications were received—

1. From the Government of the N. W. Provinces through Mr. Assistant Secretary Carmichael, the Meteorological Register kept at the Government Secretariat, Agra, for the month of August last.

2. From E. Blyth, Esq. enclosing a paper entitled "Further Remarks on the different species of Orang-utan."

3. From E. Thomas, Esq. forwarding a paper on ancient Indian numerals.

4. From B. H. Hodgson, Esq. submitting a paper on a new Perdicine bird from Tibet, with a drawing.

5. From Major A. Phayre, transmitting, from Amerapura, a transcript and translation of a Burmese scroll found in the relic chamber of a Pagoda at Prome. "The writing of the scroll," says Major Phayre "is quite modern; but is still interesting as showing a Buddhist Monk's objects and wishes in restoring an ancient Pagoda."

He also announces the discovery of an ancient city near Pagan, several inscriptions from which he intends to send to the Society.

The Curators and the Librarian having submitted their monthly reports, the meeting adjourned.

*Confirmed Nov. 7th*, 1855. J. W. COLVILE.

*Report of the Curator Museum of Economic Geology.*

*Geology and Mineralogy : Silt of the Hooghly.*—I have completed a long and careful examination of the average quantity and nature of the silt of the Hooghly and of the solid matter held in solution in the water. I have myself during twelve months taken water at the surface and at a mean depth, and I have also a set of bottles of water taken at a depth of three fathoms at the *Gasper Light Vessel*, through the kindness of Mr. T. S. Parker, her Chief Officer, which give some singular comparative results. I have moreover a set from the Rangoon and Moulmein rivers, which will form the subject of another communication.

*Kunkur from Kedgeree.*—Mr. Bensley of the H. C. Pilot service has obliged me with a fine specimen of the kunkur forming on the beach at Kedgeree, which is singularly interesting in a geological point of view, for while the waters of the river there contain both muriates and sulphates of lime and muriates of magnesia, the kunkur is simply a coarse grained ferruginous sandstone ; the cement being oxide of iron only.

ECONOMIC GEOLOGY.

*Artificial bricks.*—Colonel Goodwin has sent me a specimen of Asphalte (which we already possessed) and one of a patent artificial brick, and of this last he wished to know the composition. On examination it was found to be much the same as the patent fuel, which is coarse coal dust with the pitch from coal-tar, subjected when hot to a strong pressure, so as to cause it to adhere firmly. The artificial brick however, has the coal dust reduced to a fine powder, and about 10 or 12 per cent. of coarse siliceous sand added to it, so as to give it great solidity, and it seems probable that in making them the heat is raised high enough to melt the coal dust? Colonel Goodwin informs me that it is much recommended for foundations, and for tanks and water-courses, but for these last purposes I should fear that for a time it would give a disagreeable pitchy flavour to the water, for upon putting a fragment into a cup containing rain-water for twenty-four hours the taste of tar, or rather pitch-water, was perfectly distinct: for floorings, however, these bricks would be in India quite invaluable.

*Mr. Taylor's Burdwan Paving Stone.*—I have been carefully examining the new Burdwan paving-stone sent down by Mr. Taylor of Toposi Colliery, and have no hesitation in pronouncing it a most valuable addition to our Indian building materials. Mineralogically described it is a

pegmatite (quartz and felspar) in which the porportion of felspar is so small that for all practical purposes, it may be called a hard, fine-grained, greyish white, laminated sandstone, with minute cloudy veins of titaniferous iron (perhaps Iserine or Nigrine?) in very fine granular specks of much brilliancy when seen in a bright light. The effect of these cloudy veins is to give to the polished surface of the stone much the appearance of a very coarse, dull, yellowish grey marble, speckled with black.

I made the following experiments to ascertain what were its absorbent and retentive properties as compared with new Chunar stone.

*For absorbence of atmospheric moisture.*—A piece of Burdwan and one of Chunar stone being carefully weighed and dried in a silver basin, both having been previously exposed for some time to the damp air of the Museum, were found to give the following results:

| *Chunar stone.* | *Burdwan stone.* |
|---|---|
| Natural weight. grs. 2204 | 1569 |
| When dried,..... 2198 | 1568 |
| Loss, .. 6 | 1. |

So that the Chunar stone imbibes six parts of moisture from the atmosphere, while the Burdwan only takes up one part. It was found after about a fortnight during the late excessively damp weather, that while the Chunar stone re-absorbed something more than its former weight of water, the Burdwan stone had not absorbed any! It is impossible to adduce a higher proof of the superiority of this stone in this respect.

Farther to test the stones, both were again taken in their natural state and, without any drying, weighed and put into a basin where they were covered with rain-water and left for forty-eight hours. At the end of that time they were taken out and first gently dried by pressing them in a soft cloth and then left for an hour on bibulous paper, being frequently turned over so as to dry off all the loose external water. Upon weighing them at the end of this time, when both were fairly saturated and free from external moisture, it was found that

The Chunar stone 2209 grs. had absorbed $34\frac{1}{2}$ grs or 1.561 per cent.

The Burdwan stone 1568 ditto 6 grs. 0.382 per cent.

Hence if we call the result of the first experiment the chemical absorption it is as six to one in favour of the Burdwan stone, and if we call the second experiment the mechanical absorption, this is about the same, being as 0.382 to 1.561, or as four to one in favour of the Burdwan stone.

Mr. Taylor has already large demands for this stone, but has very handsomely offered to supply the Society at a very reasonable rate with slabs for paving the lower floor. I have no hesitation in saying that such a pavement, though less shewy, would be, for all practical purposes there, almost equal to marble, which costs one rupee four annas per square foot.

*Copper ores exported in slags.*—I have on more than one occasion, when consulted as to the working of copper ores in this country, strongly advised beginners not to attempt at first the refining process by which marketable copper is produced, which is always best performed on a large scale, and by men of long experience in such work ; but to fuse their ore, after roasting it, into slags, and to export these to the smelters in England where their market value would be properly known, and that they could thereupon safely calculate their returns.

Mr. Theobald, Senr. acting upon this advice in some experiments which Mr. Mackenzie was undertaking with him in the Singboom territory, smelted his ores to the slags upon the table, which I forwarded to a friend in Swansea, who placed them in the hands of Messrs. Bath and Sons, professional assayers there, whose report, as that on the first parcel of Indian copper so sent to Europe, is well worth placing on record.

"Our assayer has carefully tested the samples thou sent us, they contain about 50 per cent. of iron which makes them very difficult to smelt, and is also very prejudicial to their sale ; we think however, that the prices affixed to them may be obtained.

We are thy sincere friends,

(Signed) Henry Bath and Sons.

*Mining Office, Swansea,* 8*mo.* 19*th,* 1854.

| | | | | |
|---|---|---|---|---|
| No. 1, | copper | 42½ | per cent. | £37.0.0 per 21 cwt. |
| No. 2, | ,, | 41 | ,, | 35.15.0 |
| No. 3, | ,, | 39 | ,, | 34. 2.0 |
| No. 4, | ,, | 36 | ,, | 31. 0.0 |

*Dr. Campbell on Darjeling copper.*—The following copy of a letter from Dr. Campbell, Superintendent of Darjiling, to Government gives an account of that gentleman's very persevering efforts to test the value of his copper ores.

No. 229 of 1855.

*To* H. Piddington, *Esquire,*

*Curator, Museum Economic Geology, Asiatic Society, Calcutta.*

Sir,—I have the pleasure to send you copy of my last letter to Government on the progress of my copper diggings. I shall keep the Society regularly informed of any improvement in the quality of the ores.

I have the honor to be, Sir,

Your most obedient servant,

A. Campbell, *Superintendent.*

*Superintendent's Office, Darjeling, the* 19*th April*, 1855.

*To* W. Grey, *Esquire*,

*Secretary to the Government of Bengal, Revenue Department,*

*With the Hon'ble the Lieut.-Governor, Camp, Gyah.*

*Camp, Titalyah, the* 16*th February*, 1855.

Sir,—In my letter No. 591, dated 24th November last, I applied for the sanction of the Lieut.-Governor to the expenditure of Rs. 100 in digging out copper veins discovered in the Darjeling territory. This was agreed to, under date 5th December last, No. 87, and I accordingly put men to work.

2nd. After fifteen days' operations on the Pushak and Mahaldiram veins I forwarded specimens to the Asiatic Society for examination and for comparison with the ore taken from each of those veins during last year.

3rd. Annexed is a letter, original, from the Curator of the Museum of Economic Geology, dated 19th January, which is encouraging to further operations, and I am able, in addition to this, to state that the people who have been employed by me to dig out the ore are hopeful of improvement, especially in the Mahaldiram veins.

4th.—Being reluctant to recommend further outlay which I could not well controul, and being at the same time confident of the propriety of further operations below the surface, I submitted specimens of the ordinary copper of the Nipal mines to a person in Calcutta to ascertain its market value, intending if the price that could be given at Darjiling, for similar copper of our own would induce private persons to smelt our ores, to propose to Government to buy up the metal, or to sanction my offering the purchase of copper to a tradesman under some arrangement with Government for the privilege of purchasing.

5th.—I found however, that the price which could be safely given at Darjiling, twenty-five rupees per maund, would not induce the men who had been employed by me and who best knew the quality of the ores, to work the veins on their own account in the above described manner. Disappointed in this effort to go on with the operations without outlay by Government, I proposed to these persons that they should work the Pushak and Mahaldiram veins for their own benefit under some arrangement to be made with Government, but they declined the offer. After these men declined this proposal, I was about to submit to Government a plan for carrying on operations on a larger scale of outlay than hitherto, although I could not well undertake to look strictly after them, when they made me an offer of 100 rupees per annum for the privilege of working all the copper veins now known, or which might be afterwards found in the Darjeling territory.

6th.—I would not agree to submit an offer of this kind for an indefinite period, but I agreed to recommend to Government that they should have a farm of the veins now known (six) for one year for one hundred rupees; and as it is of primary importance to Government to ascertain the real value of the veins, and this cannot be done without sinking shafts or driving galleries at an expense which cannot well be estimated I consider that this is the best plan we can adopt; I therefore have the honor to recommend it for the sanction of the Lieut.-Governor.

7th.—In the meantime I have given the applicants Rajmon and Buktawur Singh, permission to go on digging out the Mahaldiram vein for one month.

8th.—If this proposition is agreed to, I shall make a point of submitting specimens of the ores monthly for examination and analysis, so that we may be fully and accurately informed of the result of the diggings.

I have, &c.

(Signed) A. Campbell, *Superintendent.*

True copy.

*Cuttack iron ores.*—In reply to an application from the Hon'ble the Governor of Bengal for a report on Mr. Samuells' iron ores from Cuttack the following was sent in.

*To* Hodgson Pratt, *Esquire,*

*Under Secretary to the Government of Bengal.*

Sir,—In reply to your letter No. 330 of 21st March, I have the honor to report as follows:

1. That Mr. Samuells' iron ore marked Kunkerie No. 1 is the "Ochry red iron ore" of mineralogists, which produces excellent iron without the aid of fluxes.

2. A specimen of this ore from Burdwan was carefully analysed by me in 1828, and gave as much as 84 per cent. of peroxide of iron equal to 59 per cent. of iron, but this was a very pure specimen containing only 9 per cent. of earthy matters and 6 per cent. of water.

3. Mr. Samuells' specimen is evidently a mere surface one, and has thus a much larger proportion of earthy matters, the oxide of iron being gradually dissolved and washed out of such specimens by the rain water filtering through them: it contains in 100 parts

| | |
|---|---|
| Water and carbonic acid, ..... | 5.50 |
| Earthy silicates, ..... | 28.40 |
| Peroxide of iron, ..... | 66.00 |
| | 99.90 |
| Loss,.. | .10 |
| | 100.00 |

4. This would give but 46.8 per cent. of metallic iron in this ore, but no doubt a better chosen specimen from a deeper bed or a deeper part of the same bed might equal that of Burdwan. In Bohemia where this ore occurs largely it is much prized. The report of our bazar people* quite confirms Mr. Samuells' account of the good qualities of the iron.

5. No. 2, Paleyra ore.

This ore is a mixture of the hydrated carbonate of the protoxide of iron, with a large proportion of earthy matter. On calcination, it changes from a very dull greyish red to a bright chocolate red.

It contains in 100 parts

| | |
|---|---|
| Water,..... | 9.76 |
| Earthy silicates,..... | 27.20 |
| Protoxide iron, ..... | 60.60 |
| Ox. manganese, ..... | 2.10 |
| | 99.66 |
| Loss,.. | .34 |
| | 100.00 |

6. This amount of protoxide of iron represents 47 per cent. of metallic iron, and from the presence of the manganese, it would probably be of a good quality.

7. As connected with the great interest which iron ores and their fluxes and smeltings have at this time, I beg to annex to the present report a paper just drawn up by me for the Journal of the Asiatic Society which already shews that the problem of the smelting and fluxes (if the kunkurs can be found in sufficient quantity) has long been practically solved by Mr. Taylor of Burdwan.

I have the honor to be, Sir,

Your obedient servant,

(Signed) H. Piddington,

*Curator, Museum Economic Geology.*

*Museum, the 14th April,* 1855.

*Coal from Thayet Myo, Pegu.*—I reported last year, Journal Vol. XXIII. p. 714, on specimens of coal brought from Ava by Capt. Niblett of the Sesostris, which was brought to Rangoon by the Burmese from fields beyond the British territory. Since that time as is now well known, coal has been discovered at Thayet Myo within the British boundary. I obtained a specimen of this coal through the kindness of Captain Niblett of

* And as they do not import iron their opinions are unbiassed.

the H. C.'s Steamer Sesostris and a memorandum forwarded by me to the Hon'ble the President in Council and to Major Phayre with a copy of the paper referred to above, was as follows:—

MEMORANDUM.

*Coal from Thayet Myo within the British territory in Ava and two miles from the banks of the Irrawaddy brought up by Captain* NIBLETT *of H. C.'s Steamer* SESOSTRIS.

1. In appearance the same as the Ava coal No. I. of the foregoing paper but more compact.

2. A great deal of shale mixed with it and much of it is *top coal* (or upper layers only) but there is abundance of the good coal, shewing that the vein has only to be properly mined to furnish good coal. Nothing is said as to its thickness or extent.

3. It flames well but does not melt. Powder cokes—coke of the coal duller than No. I. but like it burns very slowly. The ash is of a dull muddy red.

| | |
|---|---|
| 4. Its specific gravity is,..... ..... | 1.36 |
| Its contents in 100 parts are:— | |
| Water, ..... ..... | 2.50 |
| Gaseous matters, ..... | 30.25 |
| Carbon, ..... | 64.10 |
| Ash, ..... | 3.15 |
| | 100.00 |

5. Hence it is in fact the same coal as No. I. the differences not being of importance or greater than those which often occur with specimens from the same field or even from the same mines.*

H. PIDDINGTON.

*Fossil wood from Ava by Capt. Hill.*—Captain Hill of the Bankshall has obliged us with a very fine specimen of fossil wood apparently teak! from Ava.

H. PIDDINGTON.

* I regret to learn from Mr. Theobald, Junr. that the vein of this coal which he terms a lignite has been found to diminish suddenly, and that moreover that the formation in which it is found gives no hope of any true coal being discovered in it.

*Report for October Meeting*, 1855.

The donations received during the last three months are as follow:—

1. Sir J. Brooke, K. C. B., Sarawák: Fine skeletons of a large adult Orang-utan, in addition to the two mentioned in my last Report (p. 469 *ante*). A memoir on these skeletons has already been submitted for publication.*

2. Capt. Berdmore, Schwe Gyen, on the Sitang river, Pegu. A collection of numerous sundries.

Among mammalia, two specimens of a new Shrew (SOREX FULIGINOSUS, nobis, p. 362 *ante*),—a TUPAIA in spirit,—and a skin of SCIURUS KERAUDRENII.

Of birds, MICROPTERNUS PHAIOCEPS in spirit, and numerous specimens of EMBERIZA AUREOLA.

Of reptiles, seven living examples of EMYS OCELLATA, D. and B., and one of CISTUDO DENTATA; a dried young specimen of the very remarkable PLATYSTERNON MEGACEPHALUM, Gray, previously only known from China; EMYDA PUNCTATA, very small; HEMIDACTYLUS FRENATUS; PIRIPIA PERONII; DRACO LINEATUS (*Dracunculus* apud Gray, a name long previously bestowed on the 'Guinea-worm'); CALOTES MYSTACEUS; C. EMMA; LEIOLEPIS REEVESII; TILIQUA MACULARIA; RIOPA ALBOPUNCTATA; MONITOR SALVATOR; LYCODON AULICUS; LEPTOPHIS ORNATUS; DIPSAS FERRUGINEA, Cantor, *var.*; TRIGONOCEPHALUS GRAMINEUS, Mal. var.; MEGALOPHRYS GUTTULATA, *n. s.*; RANA VITTIGERA; R. ALTILABRIS, *n. s.*; ENGYSTOMA (?) BERDMOREI, *n. s.*; R. ——? (young); and tadpoles of probably our new RANA FUSCA, to be described presently; also BUFO MELANOSTICTUS.

Likewise an interesting series of land-shells; and a bottle of insects in spirit.

The novelties and rarities comprised in this collection will be brought under notice together with those presented by Mr. Theobald.

3. W. Theobald, Esq. Junr.; attached to the Government Geological Survey. Another rich collection of sundries, from Mergui and the valley of the Tenasserim river.

Of mammalia, the skeletons of a fine mature male of HYLOBATES LAR, and one of RHIZOMYS SUMATRANUS. Sundry *exuviæ* of PRESBYTIS OBSCURUS, Reid (to which *Pr. Barbei*, nobis, may now be definitively referred as a slight variety). Specimens in spirit of MEGADERMA SPASMA, HIPPOSIDEROS MURINUS, TAPHOZOUS SACCOLAIMUS, T. LONGIMANUS, NYCTICEJUS TEMMINCKII, and CYNOPTERUS MARGINATUS; SOREX MURINUS *(verus)*,

* *Vide* p. 518, ante.

and S. NUDIPES; also MUS BANDICOTA, M. SETIFER (?), and M. BERDMOREI, nobis: and frontlet of the Markhor (CAPRA MEGACEROS), from Kashmir, with tensely spiral horns (or which are straight, having a prominent ridge wound round them.)

Of birds, head of BUCEROS SUBRUFICOLLIS; and eggs of HALCYON GURIAL, MEROPS ERYTHROCEPHALUS, FRANCOLINUS PHAYREI, HOPLOPTERUS VENTRALIS,—and also of a reptile, GECKO VERUS.

Of reptiles, shells of TESTUDO ELONGATA, nobis (*J. A. S.* XXXII, 639),* EMYS TRIVITTATA, E. OCELLATA, E. NIGRA *(n. s.)*, E. PLATYNOTA (?), var.? CISTUDO DENTATA (adult), and TYRSE GANGETICA (with also the newly hatched young in spirit),—head of CROCODILUS POROSUS *(biporcatus,* Cuv.)—and specimens in spirit of LEIOLEPIS REEVESII, ACANTHOSAURUS ARMATUS, CALOTES MYSTACEUS, C. EMMA, DRACO MACULATUS, TACHYDROMUS SEXLINEATUS, TILIQUA RUFESCENS, T. MACULARIA, LYGOSOMA AURATA, ARGYROPHIS BICOLOR, Gray (*Typhlops nigro-albus,* D. and B., 15½ in. long), ARG. BRAMINUS, XENODON PURPURASCENS, COLUBER MUCOSUS, C. RADIATUS, C. PRASINUS,† LEPTOPHIS PICTUS, DIPSAS CYNODON, D. FERRUGINEA, Cantor, TROPIDONOTUS UMBRATUS (Mal. var.), TR. SUBMINIATUS, TR. JUNCEUS, Cantor, TR. NIGROCINCTUS *(n. s.)*, BUNGARUS FLAVICEPS (rare), NAIA LUTESCENS (black var., without trace of the spectacle-marking on the body,—below whitish with one dark band underneath the hood), TRIGONOCEPHALUS GRAMINEUS (2 vars.), HYDRUS GRACILIS, H. STRIATUS, H. NIGROCINCTUS,—POLYPEDATES LIVIDUS *(n. s.)*, P. LEUCOMYSTAX (var.), LYMNODYTES ERYTHRÆUS, L. NIGROVITTATUS *(n. s.)*, RANA FUSCA *(n. s.)*, ENGYSTOMA INTERBINEATUM, HYLÆDACTYLUS BIVITTATUS, and BUFO MELANOSTICTUS.

Of fishes, a curious little COBITIS-like *Siluroid,* affined to BAGRUS, but apparently constituting an entirely new generic form, described neither by Valenciennes nor by Dr. Bleeker; also a small specimen of AMPHIPNOUS CUCHIA, (B. Ham.); and examples of two Bengal species of TETRAODON, viz. T. FLUVIATILIS, B. Ham. (unique type of DICHOTOMYCTERIS, Bibron, *Rev. et Mag. de Zool.* 1855, p. 279), and T. CUTCUTIA, B. Ham. (unique type of MONOTRETUS, Bibron, *ibid.* p. 281, and probably of LEIODON, Swainson, *Class. Fish.*, 'Nat. Libr.,' II, 194, the species being

* A number of living specimens have since been received from Capt. Berdmore. Colour of naked parts olive-grey, varied with dull pale yellow and with black: head conspicuously dull yellowish-white.

† Of two specimens about equal in length, one (retained by Mr. Theobald) measures 6 ft. 10 in. To measure the other would now be inconvenient, as to remove it from the bottle might perhaps injure the specimen.

also *Leiosomus marmoratus*, Swainson apud Bleeker, *sed loc. non cit.*) The last three species, common in Bengal, were not observed by Dr. Cantor further south, in the Malayan peninsula; and they were obtained by Mr. Theobald in Mergui. The same remark applies to one or two of the reptiles, as especially COLUBER MUCOSUS.

Of Mollusca, an extensive collection of land and fresh-water shells, which (together with those presented by Capt. Berdmore from Pegu) has considerably enriched our cabinet, which previously contained few species from that range of country.

Lastly, of Crustacea, a small SQUILLA, which approximates the description of SQ. MICROPTHALMA, M. Edw., *Hist. Crust.* II, 523; but the *griffes* (or seizers) are armed on the last articulation with 5 teeth, the first of which is unusually elongated, and there are also 3 moveable spines towards the base of their penultimate articulation: thorax remarkably short, and much contracted anteriorly: eyes as described of SQ. MICROPTHALMA; the *cornea* minute: six very slight ridges along the abdomen; and its last segment bearing a mesial ridge, and numerous tubercles more or less united into vermiculated raised lines, with 6 principal spines posteriorly and other and smaller spines between them. Entire length, from ocular peduncles, $3\frac{1}{2}$ in. If new, SQ. BIARMATA, nobis.

We may now proceed to notice the various *notabilia* contained in the collections presented by Capt. Berdmore and Mr. Theobald.

EMYS NIGRA, nobis, *n. s.* To judge from the shell alone, this species would seem to be affined to E. CRASSICOLLIS; but Mr. Theobald assures us that it is not remarkable for thickness of neck. What appear to be adults, measure from $6\frac{3}{4}$ to $7\frac{1}{4}$ in. long. The young have a prominent mesial ridge above, continued throughout; and two slight and proximate lateral ridges, similar to those of E. CRASSICOLLIS but less developed. In the presumed adults these ridges appear to be worn away, as if by attrition; and even the mesial disappears excepting on the last and penultimate of the vertebral plates. Nuchal plate quadrilateral, and broader posteriorly; shewing a distinct ridge in the young: first vertebral elongate-triangular, with base to the front and truncate apex; the next two similar but broader, with anterior base rounded almost to a semi-circle; the fourth more or less hexagonal; and the fifth triangular with posterior base: caudals large and square: posterior marginal plates strongly serrated in the young, with four denticulations on each side, successively diminishing to the middle: of the sternal plates, the third pair are more than twice as large as the second; whereas in E. CRASSICOLLIS the second pair are as large as, and often larger, than the third. In the adults, the whole

shell is black, with a slight admixture of whitish underneath: in the young the shell is black above, yellowish-white below, with black radiating from the exterior hind corner of each plate. A common species along the valley of the Tenasserim; but an inhabitant of marshy jungles, rather than of the river.

E. PLATYNOTA (?), Gray: *var.*? Carapax only; the plastron wanting. Length 13 in., by 9 in. Above black, with yellow mesial ridge, which is distinct, though not prominently developed: marginal ridge prominent; and below this the colour is bright yellow, handsomely rayed with black: posterior marginal shields each terminating in an obtuse point, occasioning the hind margin of the carapax to be deeply serrated: nuclei of costal shields placed high, as near to the summit as the middle?*

CISTUDO DENTATA, Gray; *Cyclemys orbiculata*, Bell; &c. A specimen of this was presented by Major Phayre from the Irawadi (p. 481, *ante)*; another and small living example, since dead and mounted, by Capt. Berdmore, from the Sitang river; and the shell of an adult, from the Tenasserim, by Mr. Theobald: length of the last 8 in., breadth 6 in., and height 3½ in.

CALOTES MYSTACEUS, D. and B. Upon minutest comparison of Burmese with Cinghalese examples, we can detect not the slightest difference between them.

C. EMMA, Gray. This pretty species, distinguished by its post-orbita spine, is subject to considerable variation of colour. In general, there is a strongly marked broad white or rosy-white lateral band, continued from the setting or of the head to that of the tail; which in some is interrupted more or less, in others scarcely interrupted, by a series of 7 or 8 black transverse bands: sometimes the white longitudinal band is strongly developed, whilst the black transverse bands are scarcely visible; and *vice versâ*: and sometimes, again, neither is strongly marked. There is always a black line through the eye, extending to the tympanum; and in general more or less black on the throat, especially in the adult males: but familiar experience of the changes of colouring assumed by the com-

* GEOMYDA TRICARINATA, nobis, *n. s.* A small land Terrapin from Central India (Chaibása). Shell 5½ by 3¾ in; obovate, broader posteriorly: of a dark reddish-brown colour above, with three yellow longitudinal ridges, which are flat and obtuse; below pale dull-yellow. Claws long, stout, and considerably hooked. Soles expanded, indication of terrene habits. Dorsal shields hexagonoid; the third and fourth broader than long; the fifth approximating a triangular form, with posterior base: nuclei of costal shields placed high, and traversed by the low lateral ridge.

mon C. VERSICOLOR of Bengal demonstrates (as its name implies) the merely transient character of these variations.

TACHYDROMUS SEXLINEATUS, Daudin. This remarkable Lizard, with tail more than twice as long as the head and body, has previously been met with in China, Cochin-china, Java, and Borneo. A specimen procured in Mergui by Mr. Theobald minutely accords with the description by M. M. Dumeril and Bibron in every detail of structure ; but the colouring would seem to be unusually dull. We have no doubt respecting the correctness of the identification. Length of specimen $9\frac{1}{4}$ in., of which tail 7 in.

TILIQUA MACULARIA *(Euprepes macularius,* nobis, *J. A. S.* XXII, 652). This species was procured both by Capt. Berdmore and Mr. Theobald ; and the habitat formerly given with a note of doubt is probably erroneous. With five specimens before us, we do not hesitate to place it in the genus TILIQUA, Gray : where it may be readily distinguished from the common T. RUFESCENS, by having the first lateral post-nasal plate scarcely a quarter the size of the second ; whereas in T. RUFESCENS the same plate is more than half the size of the other referred to. The coloration of the two species is also conspicuously different.*

DIPSAS FERRUGINEA, Cantor, (*vide J. A. S.* XXIII, 293). The range of this species extends from Sikim and Asám to Pegu and Mergui. Its considerable variation of colouring demands notice, and would seem to depend on age. This tree-Snake does not appear to grow beyond 19 or 20 in. long, and then increases only in bulk or thickness. A fine adult procured in Mergui by Mr. Theobald is chiefly blackish above, with a series of large pale (but not strongly contrasting) spots along the spine, more or less double and alternating, but the first three or four from the head are single and mesial : lower-parts pale yellow, with a mesial line of irregular black specks, gradually increasing in number and more confluent posteriorly, until, about the middle of the body, the black predominates over the yellow, and finally leaves but a few yellow specks sprinkled upon the black ; throat and sides of face also black, continued over several of the series of abdominal scutæ : head marked as usual, with a pale line proceeding backward from each nostril, the two joining posteriorly to the eye

* Here it may be remarked that a small Monitor procured by Mr. Theobald in the Punjab Salt Range, appears perfectly identical with the PSAMMOSAURUS SCINCUS, (Merrem), common in N. E. Africa. We have before remarked this species from Upper Hindustán. A TORTRIX or ERYX, also, from the Salt Range, seems to be different from the common species or variety of Upper India, E. INDICA of Gray.

and abruptly ceasing on the crown; these and other markings variegating a black ground in a manner difficult to describe in few words. Abdomen finely iridescent; and the tail short and suddenly tapering. In a younger specimen, nearly as long but much less thick, the black colouring is considerably less developed, and but few of the pale spots are traceable along the spine: but there is a well defined broad dusky lateral band, and below this another and narrow dark line margining the series of abdominal scutæ. In a young specimen (12½ in. long), sent from Pegu by Capt. Berdmore, the colouring of the upper-parts is plain dull rufous, with scarcely an obscure trace of markings; and that of the lower is bright orpiment-yellow, the surface brilliantly shining as in the others, with minute black specks on the throat and hinder half of body underneath, and a row of small yellow spots bordering the lower jaw, which last are more or less distinguishable in the other specimens. It would seem that the tail of this young Snake was white or whitish when alive, for its terminal four-fifths, abruptly separated: for Capt. Berdmore designates it "a small brick-coloured Snake with a white tail;" and remarks that "it carries this white tail curved up."

Tropidonotus junceus, Cantor, *J. A. S.* XVI, 940: *var. Tr. dipsas*, nobis, *ibid.* XXIII, 297.—Tr. macrops, nobis, *ibid*, is nearly affined, but distinct; having a much shorter tail, and wanting the lateral rows of spots on the abdominal *scutæ*; which spots are present in Tr. platyceps, nobis, and also in Herpetodryas helena, (Daudin), which also is considerably affined, but is readily distinguishable by its much smaller eye and less strongly carinated scales. In Burmese specimens of Tr. junceus, the neck and first fourth or fifth of the body are of a vivid olive-green approaching to grass-green, marked with a series of mesial black spots more or less distinct; the colour then passes to greyish, and is marked with two alternating lateral rows (one on either side) of transversely elongated white spots, in some very distinct and conspicuous, in others obscure; and these are more or less distinctly continued to the end of the tail: there is also a dark band through the eye, and below this the throat is bright yellow in the young, a streak of the same passing up to meet its opposite upon the nape; this bright yellow gradually passes off to yellowish-white posteriorly, where the green passes to grey above; in some the throat and v-like mark on nape are white, and the latter is more or less imperfect. In the Sikim variety (? *Tr. dipsas*), there is an interrupted dark lateral band continued backward from the nape-mark; and the double series of white spots above it commence from the nape, and are longitudinal, rather than transversely elongated, as in the Burmese race: the

black line through the eye is narrower and more distinctly defined, and is even continued forward round the nose; and the labial plates above and below are more or less black-margined. Whether the two races are local, or merely casual varieties of the same, remains for observation to determine.

Tr. nigrocinctus, nobis, *n. s.* Another beautiful species, affined to the last, but at once distinguished from it, structurally, by the extraordinarily large size of its penultimate and ante-penultimate upper labials (posterior to the eye): the occipital plates are also proportionally smaller. Colour, olive-grey above, passing (like the last) to bright green towards the head; and conspicuously marked throughout with a series of about 50 narrow transverse black bands, some perfect, others broken and alternating: head with two broad black lateral streaks, one from behind the eye to the cleft of the mouth, the other below the eye: a narrow and indistinct black band edging the occipital plates posteriorly; and behind this, a broad pale collar, which was probably bright red above in the living Snake; and this red colour would seem to have extended upon the cheeks between the two broad black *striæ:* lower-parts white, each *scuta* beginning to be margined with grey from about the twentieth; and this grey gradually darkening posteriorly, until towards and upon the tail it becomes blackish and occupies about half of each scuta; besides which a row of small lateral spots may be traced, corresponding with those of the preceding and certain other species. Rows of scales 17: abdominal *scutæ* 160; subcaudal *scutellæ* 81 pairs: length of specimen $26\frac{1}{2}$ in., of which tail $6\frac{1}{2}$ in.

Bungarus flaviceps, J. Reinwardt, apud Cantor, *J. A. S.* XVI, 1033. Specimen $46\frac{1}{2}$ in. long, of which tail $7\frac{1}{4}$ in.; the hexagonal row of scales along the spine highly compressed and tectiform. As shewn by the present specimen, Dr. Cantor's supposed distinctions of colouring of the adult and young are rather those of individual variation.*

Megalophrys guttulata, nobis, *n. s.* A species of remarkable beauty; and belonging to a very different subtype from that to which the great 'edible frog' of Sikim (M. gigas, nobis, *J. A. S.* XXIII, 299), is referable. Tympanic membrane distinct, though much contracted: fore and hind-limbs subequal; the hind-toes short and but slightly webbed. Length of the larger of two specimens, from snout to vent, $3\frac{1}{4}$ in.; of extended fore-limb $2\frac{1}{4}$ in.; and of extended hind-limb $3\frac{3}{8}$ in. In the great Sikim Megalophrys (?), the hind-limbs are nearly four times the

* Unfortunately, this rare Snake has received injury from the attacks of ants. When alive, its head and tail were bright red, as Dr. Cantor describes.

length of the anterior limbs; and the hind toes are long, with interdigital membranes well developed. It is as obvious than the present speeies is a 'Tree-frog,' as that the other is not so: and the proportions of M. GUTTULATA would indieate it to be a *crawler*, rather than a *leaper;* whereas M. (?) GIGAS is as obviously a powerful leaper, and as aquatic in its habits as our common 'Golden Frog' (RANA TIGRINA). The two speeimens of M. GUTTULATA presented by Capt. Berdmore were, he remarks, "beautiful creatures of their kind; the colours being bright: the eyes are bright red with a light blue eircle round them." These fine eolours have disappeared in spirit, but it is easy to perceive that they had been vivid. At present, the baek appears of a plumbeous olive-green, with numerous large round spots more or less confluent, of a light dusky colour, the appearance of which may be eompared to that of drops of water on an oily surface, tending to uuite and flow together: limbs bauded with the same colours: the skin of the lower-parts is grauulose throughout, and appears to have been orange, marbled and variegated with dusky; one of the specimens having the throat entirely of the latter hue. The tips of the toes are searcely dilated. Inhabits Pegu.

POLYPEDATES LIVIDUS, nobis, *n. s.* As eompared with the common P. LEUCOMYSTAX, this species attains to triple the size, and has the legs and toes proportionally much longer, and the hind-toes are completely webbed (as in P. MARMORATUS, nobis, p. 188 *ante)*. Length, from snout to vent, $3\frac{5}{8}$ in.; of extended auterior limb $2\frac{1}{4}$ in.; and of posterior limb $6\frac{1}{2}$ in. General form more gracile, and the muzzle less obtuse, than in P. LEUCOMYSTAX. Skin smooth, and slightly granulose only on the hind surface of the thighs. Colour uniform dusky-plumbeous above, probably dull olive-green when alive; below whitish; and the membranes of the hind-toes dusky. A specimen one-fourth the size accords minutely in all other respects: but a number of what Mr. Theobald considers to be the young differ in having the tympanie membrane proportionally much larger, and also much nearer the eye; the general hue being paler, and the upper lip more eonspieuously white than in the grown animal. We are satisfied that Mr. Theobald is correct in assigning them to the same speeies. Inhabits the Tenasserim valley,

LYMNODYTES NIGROVITTATUS, nobis, *n. s.* In this genus it is not always easy to discriminate between species and varieties; but two very distinct races were obtained by Mr. Theobald, oue of which aeeords with speeimens from Arakan and from Dacca, and also with Dr. Cantor's description of L. ERYTHRÆUS *(J. A. S.* XVI, 1262). The other, named as above, has distinctly a more obtuse muzzle, and much smaller hind-feet; the

coloration also being conspicuously different. Colour ruddy-plumbeous above, below albescent, with a broad blackish band extending from the nostril to the base of the hind-limb, which band has merely a slight palish margin above (representing the broad white stripe of L. ERYTHRÆUS), but is bordered below by the subdued white of the under-parts, and in some specimens there are a few dark spots which tend to run together into a line, and so to form a second and narrower dark band from the fore to the hind-limb: posterior surface of fore and hind-limbs much marbled and spotted with black; their anterior surface less so, and the breast would seem in some to be more or less speckled. Length of specimen 2 in., of fore-limb $1\frac{1}{8}$ in., and hind-limb $3\frac{1}{8}$ in., the foot $1\frac{3}{8}$ in. Another closely affined species occurs in L. MACULARIUS, nobis (*J. A. S.* XXIII, 299), from Ceylon; and this again is distinct in its markings, has the upper lip more projected beyond the lower, and the tympanum is larger and more approximated to the eye. A fourth species (L. LIVIDUS, nobis, *ibid.*), also from Ceylon, is again very distinct, and much larger than the others, and this is probably gaily coloured when alive. Our specimen has its thighs broken, which may be presumed to indicate that it is eaten, and was thus crippled to prevent its escape; a cruelty which is practised with other kinds of 'edible frog' by Asiatics. Lastly, Mr. Jerdon describes a small C. PHILOPHYLLA (*J. A. S.* XXII, 533), as common in the western forests of the Indian peninsula.

RANA FUSCA, nobis, *n. s.* Large Frog, of a prevailing dark olive-grey or mud-colour above, white below; and the eye of the adult situate midway between the tympanum and nostrils: in the young (as in other species) the tympanum is placed nearer the eye: male devoid of vocal sacs. Skin subgranulose above and smooth below. A narrow pale dorsal streak in some specimens only. Upper lip black, as also the ridge commencing at the corner of the eye and continued over the tympanum. Some have the upper-parts plain, or with scarcely a trace of variegation: others have a few black spots and marblings; but the limbs are always more or less distinctly banded, and the posterior surface of the thigh is prettily marbled. Toes chiefly white, with dusky membranes. Margin of the lower jaw dusky, interrupted by a mesial and three or four lateral white spots. Length of adult 5 in., of fore-limb $2\frac{1}{8}$ in., and of hind-limb 8 in.: foot $2\frac{1}{2}$ in. The presumed tadpoles are of proportionate size, attaining to 3 in. in length before the anterior limbs make their appearance; and are of a dusky mud-colour, with a large lateral black spot on the body, and series of 3 or 4 smaller black spots along the sides of the tail. This species is common in the Tenasserim valley, and is eaten by

the natives: accordingly, some of the specimens under examination have the thighs, and others the legs, broken. The presumed tadpoles are from Pegu.

R. ALTILABRIS, nobis, *n. s.* A much smaller species than the preceding, with the hind-limbs proportionally shorter: the eyes small and elevated; and the vertical breadth from the eye to the mouth about double the usual proportion. A line drawn from the nostril to the middle of tympanum would pass under and not bisect the eye. Colour livid-dusky above, white below, freckled with black specks on the throat and sides, and on the anterior margins of the limbs: lips banded with dusky; and the limbs very obscurely banded. Length of specimen $2\frac{3}{5}$ in.; of fore-limb $1\frac{1}{8}$ in.; and of hind-limb $3\frac{3}{5}$ in.: foot $1\frac{1}{2}$ in.; and distance from eye to margin of lip $\frac{1}{4}$ in. Inhabits Pegu.*

ENGYSTOMA (?) BERDMOREI, nobis, *n. s.* This is not a true ENGYSTOMA; but we have no means of referring it to its proper genus. The fore-limbs are small and slender,—the hind enormously developed, with fully webbed toes: head small, and no external tympanic membrane. Length $1\frac{1}{2}$ in., of fore-limb $\frac{5}{16}$ in., and of hind-limb $2\frac{7}{8}$ in.; the foot $1\frac{1}{4}$ in. Colour dusky above and on the throat; rest of lower-parts reddish-white: some black spots on the sides, and interrupted bands on the limbs. In young individuals, a dusky bottle-like mark appears on the upper-parts, with the neck of the bottle, extending from between the eyes to between the houlders: in adults this becomes inconspicuous, but is distinctly traceable. Apparently a common species in Pegu.

ENGYSTOMA INTERLINEATUM, nobis, *J. A. S.* XXIII, 732. The variation of colour in this species is extraordinary. In a female with ova, $1\frac{3}{4}$ in. long, with hind-limb $1\frac{7}{8}$ in., the markings are as formerly described, only they have become much less distinct, while a great pale-edged black spot has become intensely developed, adjoining the base of each thigh above: in the former specimen, these black spots may be seen in process of development, at the ends of the two streaks which diverge from between the shoulders. In a male, the entire upper-parts are pale and have a rosy tinge, with the same black spots conspicuously developed, while the remains of the longitudinal striæ are barely traceable. All are probably very beautifully coloured when alive.

4. F. Skipwith, Esq. C. S. A small collection of sundries, from Cherra Punji in the Khásya hills; and some good land-shells from Sylhet. Among the Cherra specimens are three species of Mice in spirit, all of

* *R. robusta*, nobis, *J. A. S.* XXIII, 298, is (we are now satisfied) a phase of R. CUTIPORA, D. and B.

which appear to be undescribed; also SOREX GRIFFITHII, Horsfield (erroneously assigned by that gentleman to Afghánistán; being identical with the supposed S. MURINUS *apud nos*, p. 28 *ante*: and the true S. MURINUS having now been presented to our museum from the Tenasserim valley by Mr. Theobald):—of reptiles, ARGYROPHIS BRAMINUS, DRYINUS PRASINUS, and the young of the fine COLUBER NIGROMARGINATUS, nobis (*J. A. S.* XXIII, 290), a species previously received only from the vicinity of Darjiling.

The three species of Mice from Cherra may be thus characterized.

MUS GLIROIDES, nobis, *n. s.* This has very much the aspect of the British Dormouse (MYOXUS AVELLANARIUS;) but what little remains of the tail of the only specimen sent is nude, and the colouring is much less bright, though inclining to the same hue. It would seem to represent a very distinct division of the great genus MUS; but the specimen is evidently young, and more and better examples are needed for a satisfactory examination. Fur exceedingly dense and fine, nearly $\frac{3}{8}$ in. long upon the back, and of a light brown colour tinged with fawn externally, the piles dusky-ash for the basal two-thirds or more: lower-parts white, very faintly tinged with fawn; the white purest about the lips and chin: whiskers long, copious and fine (like those of MYOXUS AVELLANARIUS): feet large, and clad scantily with white hairs; but a distinct dark brown mark upon each hind-foot, reaching almost to the division of the toes: ears rather small, ovoid and naked. Length of head and body 2 in.; tail ——— ?; ears posteriorly $\frac{5}{16}$ in.; and tarse $\frac{5}{8}$ in.

M. ERYTHROTIS, nobis, *n. s.* Another and very different form of Mouse from the last, and equally from the common house Mouse. Length of head and body $2\frac{1}{4}$ in.; tail $2\frac{3}{8}$ in., and consisting of about 26 vertebræ: ears small and hairy, $\frac{5}{16}$ in. long externally: hind-foot and claws $\frac{11}{16}$ in. Fur long and very dense; of a rich dark brown colour, grizzled, and brightly tinged with rufous or rufo-ferruginous towards the tail and upon the ears conspicuously: lower-parts albescent, tinged with fawn: feet with brown hairs upon their upper surface; and the tail considerably hirsute. One specimen only received.

M. CUNICULARIS, nobis, *n. s.* A small field (?) Mouse remarkable for its ample ears, and tail shorter than the head and body. Length of head and body $2\frac{1}{2}$ in.; of tail $2\frac{1}{8}$ in.; ears posteriorly $\frac{1}{2}$ in.; and hind-foot $\frac{11}{16}$ in. Colour of a wild Rabbit (LEPUS CUNICULUS) above, below white; and the feet with brownish hairs above, but with white hairs upon the toes: tail conspicuously ringed, the setæ minute and inconspicuous. A dozen specimens are sent of this species, some of which are more or less injured.

5. R. W. G. Frith, Esq. Kulneah, Jessore. Also a collection of sundries preserved in spirit: comprising two Bats, KERIVOULA PICTA (fine) and NYCTICEJUS TEMMINCKII;—the following birds remarkable for the locality—GARRULAX SQUAMATUS, IOLE VIRESCENS, and HEMIXOS FLAVALA, with the curious young of CENTROPUS RUFIPENNIS, and those of NETTAPUS COROMANDELIANUS; of snakes—BUNGARUS ANNULARIS (small, and bottled while in the act of swallowing a TROPIDONOTUS STOLATUS), VIPERA RUSSELLII, XENODON PURPURASCENS (fine), the common LYCODON AULICUS, CALAMARIA SAGITTATA, and a remarkably beautiful specimen of DIPSAS TRIGONATA, and the young of HYDRUS STRIATUS; frogs—POLYPEDATES LEUCOMYSTAX (var.), HYLÆDACTYLUS BIVITTATUS (beautifully marked variety), and an interesting series of the tadpoles of RANA VITTIGERA;*—fish—SYNGNATHUS CUNCULUS, B. Ham.; and of insects—

* In Dr. Cantor's 'Catalogue of the reptiles inhabiting the Malayan peninsula and islands,' (*J. A. S.* XVI, 1060), R. RUGULOSA and R. VITTIGERA, Weigmann, are placed as synonymes of R. TIGRINA. This is a mistake. Neither of the former appears ever to exceed in magnitude the British R. TEMPORARIA; and R. VITTIGERA (v. *R. assimilis, robi, passim*), is readily distinguished at any age by its semi-palmated hind-feet, the inter-digital membranes of which are not more developed than in our common Tree-frog (POLYPEDATES LEUCOMYSTAX). In accordance with this structure, it is decidedly less aquatic in its habits than the others are, and is found further away from water, under shelter of low herbage and growing crops, where it can derive the necessary moisture from the night-dews. It is as common as the great R. TIGRINA, in the vicinity of Calcutta. R. RUGULOSA = *R. Leschenaultii*, D. and B. *apud* Cantor, *sed nec apud* Jerdon (at least Mr. Jerdon sent to our museum a different and much larger species by that name many years ago), v. *R. bengalensis*, Gray, *apud nos (passim)*. We have not observed this species wild, but have occasionally received a lot of living adults taken in the neighbourhood. Some are distinctly marbled and variegated when alive, others not so; which is at variance with Dr. Cantor's statement. The pale dorsal line seems never to occur in this species; and is as often absent as present in R. VITTIGERA: but in R. TIGRINA it appears to be constant. Our largest male of R. TIGRINA measures—head and body 7 in., and extended hind-limb 9 in. Though so common, we have never remarked the tadpoles of R TIGRINA; but the young frogs, measuring—head and body but $\frac{5}{8}$ in. to $\frac{3}{4}$ in., are common. At any age, this species is at once distinguished by its more gracile form, by the considerably less obtuse shape of its muzzle, and by the brilliancy of its colouring when alive. Its agility is remarkable; often taking several long lapes in rapid and continuous succession, making always for the water, and not plunging directly into it like R. TEMPORARIA, but taking two or three successively diminishing springs along its surface and then diving below. It is further remarkable for its extraordinary

the larva and pupa of SATURNIA ATLAS, and various other larvæ, &c., of more or less interest.

6. J. Bedford, Esq. Specimens of SULA FIBER and ANOUS STOLIDUS from the vicinity of N. Zealand.

7. Capt. C. C. Beaumont. A few specimens of fish caught in the Pilot's ridge, Lower Hugli. They consist of TRIACANTHUS ACULEATUS (remarkably fine), TETRODON LUNARIS, MESOPRION JOHNII, CORVINA CHAPTIS, and a CARANX (undetermined).

8. Capt. Jethro Fairweather. Two fine specimens of OSTRACION TURRITUS, L. (genus *Tetrasomus*, Swainson), from the vicinity of Muscat. Capt. Sherwill also presented, some time ago, a fine specimen of the curious little OSTR. DIAPHANUS, Schneider, from the C. G. Hope.

E. BLYTH.

## LIBRARY.

The library has received the following accessions during the month of September last.

*Presented.*

Selections from the Records of the Government, N. W. Provinces, Vol. I. *Agra*, 1855, Rl. 8vo.—BY THE GOVERNMENT.

Selections from the Records of the Madras Government, No. X. Reports on Important Public Works, for 1852.—BY THE BENGAL GOVT.

A Guide to Analysis in Geological and Agricultural Chemistry. By an Officer of the Bengal Engineers, *Calcutta*, 1855, 8vo.—BY THE SAME.

Recueil des Actes de l'Academie Imperiale des Seienees, Belles-lettres et Arts de Bordeaux; seizième année, 1854, 3 Trimestre.—BY THE ACADEMY.

Beretning om Fante-eller Landstrygerfolket in Norge. Af Gilbert Sundt. *Christiania*, 1850, 12mo.—BY THE UNIVERSITY OF CHRISTIANIA.

Beretning om Bodsfængslets Orksomhed i aaet 1851-52. *Christiania*, 1854, 8vo.—BY THE SAME.

Pharmacopœa Norvegiea Regia auctoritate edita. *Christiania*, 1854, 8vo. —BY THE SAME.

Klinik over Hudsygdommene og de syphilitiske, Sygdommei 1852, ved W. Boeck. *Christiania*, 1854, 8vo. pamphlet.—BY THE SAME.

habit of preying upon small birds, as was first noticed by T. Wright, Esq. of Saharunpur *(Calc. Journ. N. H.* III, 284), and of which two instances have since come to our knowledge, one of them contributed by our late Secretary, Mr. Grote. The smallest fully-formed frogs of R. VITTIGERA measure from $\frac{5}{8}$ to $\frac{3}{4}$ in. from muzzle to vent; and of this size many will be found with tail in process of absorption. We know of only these three species of true RANA in L. Bengal.

Nyt Magazin für Naturvidenskaberne, Udgives af den physiographiske Forening i Christiania ved C. Langberg. *Christiania*, 1853, 8vo. pamphlet. —By the Same.

Det Kongelige Norge Frederiks Universitets Aarberetning for 1852. *Christiania*, 1854, 8vo. pamphlet.—By the Same.

Syphilistimen studeret ved Sygesengen af W. Boeek. *Christiania*, 1854, 8vo.—By the Same.

Das Chemisehe Laboratorium des Universitet Christiania und die darin Ausgeführten Chemisehen Untersuehungen. Herausgegeben von A. Streeker. *Christiania*, 1854, 4to. pamphlet.—By the Same.

Norsk og Keltisk, Om det norske og de Keltiske Sprogs Indbyrdes Loan af C. A. Holmbœ. *Christiania*, 1854, 4to.—By the Same.

Symbol ad ad Historiam Antiquiorem Rerum Norvegiarum, Edidit P. A. Mureh. *Christiania*, 1850, 4to.—By the Same.

Reizen en on der soekingen in Sumatra gedran op last der Nederlandsehe Indisehe Regering, Tussehen de jaren en 1833-34, door Dr. S. Muller en Dr. L. Horner. *Sgravenhage*, 1855, 8vo.—By the Authors.

Natvurkundig Tijdsehrift voor Nederlandsehe Indië, Deel VIII. aflevering V. und VI. und deel III.—IV.—By the Natural History Society of Netherland's India.

Bijdragen tot de Taal-Land-en Volkenkunde von Neerlandseh Indië. Derde deel, 1855.—By the Royal Institute of History, Geography and Ethnology of Netherland's India.

Anniversary Address to the Geographieal Soeiety of London, by W. J. Hamilton, Esq. for 1853. London, 1855.—By the Geographical Society.

Journal of the Geographieal Society, Vol. XXIV.—By the Same.

Annual Report of the Grant Medieal College, Bombay, for the session 1854-55.—By the College.

The Caleutta Christian Observer for Sept. 1855.—By the Editors.

The Oriental Baptist, No. 105.—By the Editor.

The Upadeshak, No. 105.—By the Editor.

The Oriental Christian Speetator, August, 1855.—By the Editor.

The Tattwabodhini Patriká, No. 146.—By the Tattwabodhini' Sobha'.

The Durbin for September 1855.—By the Editor.

The Citizen Newspaper for Sept. 1855.—By the Editor.

The Central Star, Vol. III. No. 29.—By the Editor.

The Indian Times, Vol. I. No. 5.—By the Editor.

*Exchanged.*

The Athenæum, for June, 1855.

The Philosophieal Magazine, for July, 1855.

*Purchased.*

Annales des Sciences Naturelles, Tome III. No. 2.
Revue et Magazin de Zoologie, No. 5, for 1855.
The American Journal of Science and Arts, Nos. 55 and 57.
Revue des Deux Mondes, June, 1855.
The Annals and Magazine of Natural History, No. 91.
The Quarterly Review, No. CXCIII.
The Edinburgh Review, No. 207.
L'Athenæum Français, Nos. 2, 3, 4, 5, 7, 8, 9, 14, 24, 25, 26 and 27.
Bulletin Archéologique, Nos. 2, 3 and 6.
The Literary Gazette, 2004 @ 8.
Journal des Savants, Juin, 1855.
Comptes Rendus, No. 24, 25, 26 and I.

RA'JENDRALA'L MITTRA.

*Oct.* 1*st*, 1855.

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FOR NOVEMBER, 1855.

The Society met on the 7th Inst. at the usual hour.

Sir J. W. Colvile, Kt. President, in the chair.

The proceedings of the last month were read and confirmed.

Presentations were received—

1. From W. Theobald, Esq., facsimile of an inscription from Rangoon.

2. From H. Cope, Esq., facsimile of an inscription found in an excavation lately made at Kangra, under the superintendence of Capt. Walker, 7th N. I. and presented by him to Lt. Dunbar, of the 6th M. N. I.

3. From the Govt. of Bombay through Lt. E. F. Fergusson, Supt. Govt. Observatory, copy of the meteorological observations made at the Observatory in 1852.

4. From Capt. Dicy 1st Asst. Master Attendant, a stone Image of Sivapárvatí, and 2 silver and 2 gold coins found near the Light House at Saugor.

The following gentlemen, duly proposed and seconded at the last meeting, were balloted for and elected ordinary members.

P. W. Legeyt, Esq. Bombay, C. S.

J. Middleton, Esq. (re-elected.)

The Chairman announced to the meeting that the Council have appointed Bábu Rájendralál Mittra, to officiate as Secretary pending the election of a Secretary.

Communications were received—

1. From the Govt. of the N. W. Provinces through Mr. Asst. Secy. W. Carmichael, forwarding copy of a meteorological register kept at the Office of the Secy. to the Govt. at Agra, for the month of Sept. 1855.

2. From Bábu Rádhánáth Sikdár, enclosing abstracts of the results of the hourly meteorological observations taken at the Surveyor General's Office, in the month of July, 1855.

3. From A. Grote, Esq. enclosing a letter from Dr. Hunter, to Col. Hannay, on a collection of clays, &c., from Debrughur, Upper Assam.

The following is Dr. Hunter's report on the specimens.

No. 1. Brilliant white kaolin or porcelain earth of first rate quality, suited to the manufacture of porcelain, chemical, and table wares.

No. 2. Fresh compact white felspar, the Petunse of China, used in the bodies and glazes of porcelain and pottery.

No. 3. Fossil wood of coal measures, makes good table weights when polished (silicious.)

No. 4. White fossil wood of coal measures impregnated with Alumina (a rare kind of fossil wood.)

No. 5. Indianite, a mineral intermediate between quartz and felspar, contains a good deal of lime or potass and melts into a *pure* white enamel.

No. 6. Shell limestone or blue mountain limestone of the coal formations containing fossil wood.

No. 7. Compact limestone with crystals of calcareous spar and transverse septae.

This is a fragment of a gigantic Ammonite.

No. 8. Tuffaceous lime, portion of a gigantic Ammonites catena (see plate 42 Fig 3, of Buckland's Geology.)

No. 9. Tuffaceous lime and clay slate containing impressions of shells and of an *Ammonite.*

No. 10. This is a very fine specimen of nepheline, a rare mineral belonging to the felspar family.

No. 11. Granular Indianite containing chlorite, useful in the bodies of stone ware.

No. 12. Yellow ochron marl from coal measures, Jeypore.

No. 13. Blue shale from the coal measures, Jeypore.

No. 14. Yellow sandy ochre from the coal measures, Jeypore.

No. 15. White soft aluminous kaolin, from the vicinity of Golaghat. This with No. 1, and No. 2, ought to make first rate porcelain.

No. 16. Red ochre from the Naga hills useful for coloring glazes and painting pottery or porcelain.

No. 17. Tough black clay from the river bank Golaghat, useful for pottery, roofing and paving tiles, requires to be mixed with 2 parts of slaty clay or shale No. 13.

No. 18. White ball clay useful for fire-bricks, seggars and stoneware.

No. 19. Tough blue clay, useful for stoneware and for seggars with equal parts of No. 18.

No. 20. Yellow sandy clay too coarse except for brick-making, to be used with tough brown clay or No. 21.

No. 21. Tough black clay useful for bricks and tiles.

No. 22. Potter's clay unwashed. This is like Stourbridge fire clay, used for seggars, fire-bricks, stoneware and chemical ware.

No. 23. Fine silt used for making bath bricks.

No. 24. Yellow silt used for bath bricks for sharpening knives.

No. 25. Grey silt from the bed of a tank (a very sandy clay of little use.)

No. 26. Red ochre (washed) used for coloring pottery.

No. 27. Slaty clay or shale used for bricks along with No. 22, or No. 18.

No. 28. Tough blue clay from the coal measures, Jeypore, used for pottery and making artificial hydraulic cement.

No. 29. Quartz and felspar pebbles from the hot springs near Golaghat.

No. 30. Fossil wood and bones or horns converted into yellow ochre.

No. 31. Soft aluminous shale or Polier slate used for polishing and burnishing metals.

No. 32. Red marl used for coloring dips and glazes.

No. 33. Yellow clay makes bright red earthenware.

No. 34. This is not selenite but agalmatolite, the figure-stone of the Chinese. The selenite ought to be sought for in the vicinity of salt springs.

The sample of soapstone is of the finest and whitest description, it is like the fine French chalk used for scouring woollen cloth. Of the above samples Nos. 17—21, and 23, would work well together, 18, or 22, would work well with 27 and 28, with 31. You cannot use the kaolin yet, till you get mills to grind the felspar and quartz to a creamy consistency.

4. From E. Thomas, Esq. submitting a paper on the Coins of the Gupta dynasty.

5. From B. H. Hodgson, Esq. enclosing vocabularies of the Toda, Kotá, Badaga, Kurumba and Irula tongues.

6. From Lt. R. Stewart, North Cachar, forwarding "Notes on Northern Cachar, with appendices, on the natives of the country and their languages.

7. From W. Theobold, Esq. submitting a paper on Indian oology.

The Librarian submitted his usual monthly report.

Capt. Thuillier, at the request of the chairman, read to the Meeting extracts from a private letter from M. Adolphe Schlagintweit, giving an account of his travels beyond the Kumaon range.

## Library.

The Library has received the following accessions since the last month, viz.

*Presented.*

Madras exhibition of 1855 : Catalogue Raisonné of the thirty classes into which the articles in the exhibition are divided, with an Index of the subjects comprised in each class and of the names of exhibitors; compiled for the use of the Jurors, by Lieut. H. P. Hawkes, *Madras*, 1855, fl. fol.—By the Govt. of Bengal.

Official and descriptive Catalogue of the Madras exhibition of 1855, 4to.—By the same.

Ossetische Sprachlehre nebst einer Abhandlung uber das Mingrelische, Suanische und Abchasische, von Dr. Georg Rosen, 4to. Pamphlet.—By the Author.

Catalogue of Stars near the Ecliptic observed at Markree, vol. III, *Dublin*, 1854. 8vo.—By the Royal Society of London.

Philosophical Transactions of the Royal Society of London, vol. CXLIV. Parts I.—II.—By the Same.

Transactions of the Royal Society of Edinburgh vol. XXI, Parts I.—II.—By the Society.

Proceedings of the Royal Society of Edinburgh, Session 1853-4, No. 54-5. —By the same.

Selections from the Records of Government, North Western Provinces, Part XXI.—By the Govt.

Selections from the Public Correspondence of the Punjab Administration, No. XII. 4 copies.—By the Chief Commissioner of Lahore.

The Mollusca, or the Classes, Families and Genera of Recent and Fossil Shells, by Edward Balfour.—By the Author.

The Upadeshak, No. 107.—By the Editor.

The Oriental Baptist, No. 107.—By the Editor.

The Oriental Christian Spectator, No. 9.—By the Editor.

The Calcutta Christian Observer, for Oct. and Nov. 1855.—By the Editors.

The Durbín, a Persian newspaper, for Oct. 1855.—By the Editor.

Selections from the Records of the Goverment of India, No. VIII. Report on the Metalliferous Deposits of Kumaon and Ghurwal.—By the Govt. of India.

Dictionnaire Français, Arabe, Persan et Ture, par le Prince Alexandre Handpére, Vol. I. *Mocon*, 1840, 4to.—By ————?

The Indian Annals of Medical Science, No. V.—By the Editor.

Magnetical and Meteorological Observations made at the Hon'ble East India Company's Observatory at Bombay, in the year 1852, under the superintendence of Lieut. Fergusson.—By the Govt. of Bombay.

*Purchased.*

Revue de Deux Mondes, 1-15, Juillict et Aout.

Mohammed der Prophet, sein Leben und seine Lehre. Aus handschriftlichen quellen und dem Koran geehöpft und dargestellt von Dr. G. Weil. *Stuttgart*, 1843, post 8vo.

The North American Review, No. 146.

The American Journal of Science and Arts, No. 58.

The Annals and Magazine of Natural History, No. 92.

The Literary Gazette, Nos. 2009 to 12.

L'Athenæum Français, Nos. 28 to 31.

Bulletin Archaeologique, No. 7.

Revue et Magazin de Zoologie, No. 6, for 1855.

Annales des Seiences Naturelles, Tome III, No. 3.

Description des Animaux Fossiles du groupe Nummulitique de l'Inde par le Vicounte d'Archiac. Part II. 4to.

L'Empire Chinois, faisant suite a l'ouvrage intitulé Souvenirs d'un Voyage dans la Tartarie et le Thibet, par M. Hue. Deuxieme edition. *Paris,* 1854, 2 vols. 8vo.

A Gazetteer of the Territories under the Government of the East India Company and of the Native States on the Continent of India. By E. Thornton. *London,* 1854, 4 vols. 8vo.

Egypt's Place in Universal History, by Bunsen, vol. II.

Bunsen's Philosophy of Universal History, 2 vols. 8vo.

Journal des Savants Vol. for 1838 and for Juilliet, 1855.

Comptes Rendus, Nos. 2 to 5.

*Exchanged.*

Calcutta Review for Sept. 1855.

The Athenæum for July, 1855.

The Philosophical Magazine, No. 64.

*Nov. 7th,* 1855. Ra'jendrala'l Mittra.

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For December, 1855.

At the usual monthly general Meeting of the Society held on the 5th instant.

Sir J. W. Colvile Kt. President, in the chair.

Presentations were received—

1. From R. P. Harrison, Esq. through A. Grote, Esq. 3 bronze figures. "They were found," says Mr. H. "by a native about five miles from the station (Cuttack,) when digging for the foundation of a new house. There is an inscription at the back of one of the figures which appears to be in Sanscrit. I could find no one here who could read it. The figures are not those of any deities usually worshipped in this part of the country. They do not seem to be very ancient, but as Samuells told me the Society might like to have them, I forward them herewith."

Bábu Rájendralál Mittra stated that the figures were Buddhist, and between seven and eight hundred years old, and submitted the following transcript and translation of the inscription.

स्वस्ति श्रीययाति नगरान्तस्थितौ श्रीगौडचन्द्र देवस्य विजयराज्यः सम्वत् ५५ अत्र आश्रितः कमन्दीटचमूलावस्थिता यं नयन्ति स्वानः तले सेवका चयस्त्रावरणम् ॥

*Translation.*

Prosperity. In the samvat 55 of the victorious king, Sri Gaudchandra Deva, during his stay in the suburbs of Yayátinagara. On the top are kamandi (query, kámánga, the exciters of lust ?) who are supported by the dogs at the root of the tree; (around) the base are worshippers ; three are attendants."

2. From Baron Von Hammer-Purgstall, the 6th vol. of his History of Arabic Literature.

3. From Bábu Sivaprasád, through Principal Isvarachandra Vidyáságar, the 1st vol. of his Bhugol Hastámalak, a treatise on Geography in Hindi.

4. From Principal Isvarachandra Vidyáságar, his 1st and 2nd Pamphlets in Bengali, on the marriage of Hindu Widows.

The following gentlemen were named for ballot at the next ordinary Meeting.

R. H. Russell, Esq. B. C. S. Chittagong, proposed by F. Beaufort, Esq. and seconded by Capt. Thuillier.

Dr. von Leibig, Professor at the Presidency College, proposed by Mr. Grote, and seconded by Sir J. Colvile.

Col. Smith, proposed by Mr. Allen, and seconded by Mr. Grote.

J. W. B. Money, Esq. B. C. S. proposed by Sir J. Colvile, and seconded by Mr. Atkinson.

The chairman announced that Dr. Boycott having resigned, the Council had elected, subject to the confirmation of the Society, Mr. W. S. Atkinson, as member of their body and honorary Secretary to the Society.

He also stated, in behalf of the Council, that the situation of House Serjeant to the Society having become vacant by the death of Serjeant MacGrath, they had appointed a Jemadar on Rs. 12 and an additional Chowkedar, on Rs. 6 per mensem, to perform his duties. The arrangement was approved and sanctioned.

Capt. Thuillier gave notice of his intention, at the next annual general meeting, to propose to alter and amend so much of Rule 8, as prescribed a quarterly payment of 16 Rs. subscription for all members of the Society and to substitute a lower rate.

Communications were received—

1. From Mr. Under-Secy. Morris, communicating copy of a letter from the Govt. to the Magistrate of Bhághalpur, directing him to keep the Jammá masjid clear of jungle.

The letter is as follows:—

No. 647.

From the Under-Secy. to the Govt. of Bengal,

To the Magistrate of Bhágalpur.

Dated Fort William, the 3rd November, 1855.

Sir,

General. I am directed by the Lieutenant-Governor to furnish you with a copy of the correspondence noted in the margin, and to request that you will take measures to keep the Masjid at Rájmehal therein referred to, free from jungle, so that it may be easy of access to antiquarians or other visitors.

From Managing Director and Agent of the East India Railway Company. Dated 27th April, 1855. and one enclosure.
To do. do. No. 931, do. 9th May.
To the Railway Commrs. No. 932 @ do.
From ditto ditto, No. 106, do. 28th May.
To the Secy. Asiatic Society, No. 1230. Dated the 7th June.
To ditto ditto, No. 1871, do. 11th Sept.
From ditto ditto, dated 22nd Oct.

For this purpose you are authorized to incur such moderate annual expense as may be necessary, submitting to this office previously an estimate for approval. It is understood that the building is now free from jungle, having been recently cleared by the Railway Company's Officers, but you will ascertain how this really is.

2. You are requested to report whose property the Masjid now is.

Yours, &c.

(Signed) G. G. Morris,

*Under Secy. Govt. of Bengal.*

2. From the Govt. N. W. P. through Mr. Asst. Secy. W. Carmichael, forwarding copy of a meteorological register kept at the office of the Secy. to the Govt. of the N. W. P. at Agra for the month of October last.

3. From the Government of Bengal, through Mr. Under-Secy. Morris, forwarding a report on the Economic Geology of Upper Assam with two boxes of specimens.

Extracts from the report were read.

The Librarian submitted his usual monthly report.

LIBRARY.

The following additions have been made to the Library since the last Meeting.

*Presented.*

Sitzungsbericht der kaiserlichen Academie der Wissenschaften, Mathematisch-Naturwissenschaftlich classe. Band XII, heft V. Band XIII, heft 1-2, and Index to Band X.—BY THE ACADEMY.

Ditto Philosophisch-Historische Classe, Band XII, heft V. Band XIII, heft. 1-2.—BY THE SAME.

Monumenta Habsburgica, 1er Band.—BY THE SAME.

Archiv fur Kunde österreichischer Geschichtsquellen, Band XIII, 1-2, heft.—BY THE SAME.

Notizenblatt, Beilage sum Archiv fur Kunde österreichischer Geschichtsquellen, Nos. 18 and 24.—BY THE SAME.

Bhugol Hastámalak, or an Epitome of Geography in Hindi. By Bábu Sivaprasád, *Calcutta*, 1855, 8vo.—BY THE AUTHOR.

On the Marriage of Hindu Widows, 2 Pamphlets, by Principal Isvrachandra Vidyáságara.—BY THE AUTHOR.

Natuurkundig Tijdschrift voor Nederlandsch Indie, Deal IX, Nos. V.—VI.—BY THE EDITORS.

The Durbín, a Persian newspaper, for Nov. 1855.—BY THE EDITOR.

The Tattwabodhini Patriká for Nov.—BY THE TATTWABODHINÍ SABHA'.

The Citizen newspaper, for Nov. 1855.—BY THE EDITOR.

The Oriental Christian Spectator for Oct. 1855.—BY THE EDITOR.

*Purchased.*

The English in Western India, being the Early History of the Factory at Surat of Bombay, and the subordinate factories on the Western coast, by P. Anderson, *Bombay*, 1854, 8vo.

Indische Gedichte in deutschen Nachbildwhen over Albert Haefer. *Leipzig* 1844, 2 vols. 12mo.

Revue des Deux Mondes, tome IX, and X, 1, 2, 4, Livraisons.

Comptes Rendus, Nos. 6 to 10.

L'Athenæum Française 9 Nos.

*Exchanged.*

The Athenæum, for Aug. 1855.

RA'JENDRALA'L MITTRA.

*Dec.* 1*st*, 1855.

For use in Library only